MIOARA MANDEA

NARATIVE GENERAL OVERVIEW

Mioara Mandea is a distinguished scientist whose work spans observational geomagnetism, Earth physics, planetary science, and space physics. Her cross-disciplinary research has significantly advanced our understanding of geophysical phenomena. Remarkably, Mandea's scientific journey began in 1994 after transitioning from Eastern to Western Europe, earning a second PhD to establish her academic career in France. Since 2022, she has served as Head of the "Scientific Coordination" Department at French Space Agency (CNES), balancing her managerial responsibilities with active research and regular publications in leading journals.

First, some background and context. The geomagnetic field on the core-mantle boundary is our best window into how planetary dynamos work, and much information about the geodynamo is found in time derivatives of the field there. Its first time derivative, the geomagnetic secular variation, gives direct information on fluid motions in the liquid outer core because the core field is, to some approximation, a tracer of that flow. Surprisingly perhaps, there is also much information in the second time derivative of the core field, the secular acceleration. The best-known examples of this are the so-called geomagnetic jerks, abrupt changes in the secular acceleration that appear as V-shaped fluctuations in geomagnetic secular variation records.

Discovered in the 1970s, jerks were initially seen as little more than geomagnetic curiosities. Now they are primary evidence for how rapidly the flow in the outer core changes, and they also have become useful tools for probing the core and lower mantle. This progress is thanks in large part to the efforts of Prof. Mandea. Here, four areas where her work has been particularly decisive are underlined.

Jerk Identification. Practical difficulties in identifying and characterizing jerks in the geomagnetic record have long been major obstacles. Prof. Mandea spearheaded the effort to identify and characterize these events, applying several wavelet-based analysis methods that were new to geomagnetism at the time (Alexandrescu et al., 1996; see also Qamili et al., 2013; Balasis, 2016). These developments allowed jerks to be used as impulsive sources for inferring the electrical conductivity of the lower mantle (Alexandrescu et al., 1999).

***Local vs Global Ori*gin**. The review paper by Mandea et al. (2010) definitively established that most jerks are local, not global as previously thought. It also established they are connected to rapid 3D variations in the core flow, and do not simply arise from torsional oscillations of the outer core, which had been the prevailing view.

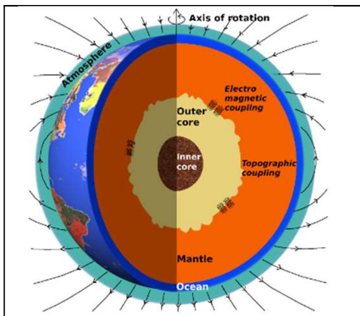
Rapid Core Flow Changes. Olsen and Mandea (2008) conclusively demonstrated the existence of flows in the outer core with time variability measured in months, using magnetic field measurements from multiple satellites over a decade of time that included two geomagnetic jerks. This study placed jerks squarely within the broader context of rapid changes in the magnetic field and the flow inside the core. Existence of such rapidly varying flows (after 4.5 byr of Earth evolution) implies the outer core is far more energetic and dynamically active than previously thought. It opened the floodgates for a wide range of new investigations into short term geomagnetic phenomena that have core origins, including localized magnetic intensity spikes, and links between these geomagnetic variations and other geophysical processes such as the Chandler wobble and sub-decade scale variations in the length of day.

Geomagnetic-Geoid Links. Finally, the attention has to be drawn to her very provocative PNAS study (Mandea et al., 2012) delineating connections between geomagnetic secular acceleration from the CHAMP satellite and inter-annual variations of the geoid measured by the GRACE satellite, in an area extending from beneath the South Atlantic to beneath the Indian Ocean. It proposed a common origin of the magnetic and gravity signals coming from the core in this region, an interaction that had been conjectured about but never documented. This is a good example of envelope-pushing research that has often served to

With 195 peer-reviewed papers, over 11,000 citations, and leadership in major projects such as GRACEFUL (ERC) and "3D Earth" (ESA), Mandea's scientific output is extraordinary. Her achievements have been recognized with prestigious awards, including the AGU International Prize, EGU Petrus Peregrinus Medal, and the Emil Wiechert Medal. She is an elected member of esteemed academies, including the Academy of Sciences of Romania, Academia Europaea, and the French Bureau des Longitudes, and was honored as Officer de l'Ordre de Mérite by the French President.

Mioara Mandea's contributions exemplify GEOSCIENCES mission and goals: ***First, her leadership in the collection and stewardship of data is extraordinary,*** through the collation of observatory records of geomagnetic field behavior, the collection and analysis of gravity, magnetic and imaging data from multiple satellite missions (Swarm, CHAMP, GRACE, GOCE), and the development of new technologies for future Earth observations (e.g., magnetic field measurements from nanosats). ***Second, her research contributions span discovery and solutions science***, and in both areas is not limited to one field. Third, she has a ***deep commitment to training*** of young people and to ***international inclusivity*** in geophysics. Her students have gone on to a wide range of careers, inheriting her inclusive, partnership approach to science. Finally, ***her service contributions to the community are exemplary*** through her many management and leadership activities; most recently serving for over a decade in leadership roles at CNES, and for much of the past 3 decades in different roles, including Secretary General of the European Geosciences Union (EGU) and President of the International Association of Geomagnetism and Aeronomy. In 2023, she was elected President-Elect of the International Union of Geodesy and Geophysics, set to become only the second woman in history to hold this role in 2027.

Finally, in a nutshell, the GRACEFUL project and her 5 major publications leading to this ERC Synergy Grant.



GRACEFUL project, led by Dehant, Mandea, and Cazenave, combines magnetic, gravitational, and rotational data with advanced models to reveal how Earth's core dynamics influence not only its deep interior but also the entire Earth system, including climate, through interconnected fluid and solid layers.

Mandea M., Dehant V., Cazenave A., GRACE Satellite Gravimetry for deep interior. Special issue on `GRACE and Geosciences´, Eds. L. Seoane and G. Ramillien, Remote Sensing, 12(24), 4198, DOI: 10.3390/rs12244186, 2020.
The first publication by the GRACEFUL PIs, underling the potential of gravity data to enhance understanding of Earth's deep interior, with a focus on core dynamics, through satellite observations and modeling.(11 cit.)

Mandea, M. et al., Recent changes of the Earth's core derived from satellite observations of magnetic and gravity fields, *PNAS,* DOI:10.1073/pnas.1207346109, 2012.
The first paper showing that changes in the gravity field correlate with changes in the magnetic field, both driven by fluid flow in the core, on timescales of a few years to a decade. This study serves as a foundation for the GRACEFUL project. (46 cit.)

Olsen N., M. Mandea, Rapidly changing flows in the Earth's core, *Nature Geosciences*, DOI:10.1038/ngeo203, 2008.
A pioneering study showing the existing of rapid flow at the top of the Earth's core, revealed by rapid changes in the magnetic field, and that these localized core flow with large accelerations are also matching Length-of-Day variations. (190 cit.)

Hulot G. et al., M. Mandea, Small-scale structure dynamics of the geodynamo inferred from Ørsted and MAGSAT satellite data, *Nature*, 416, 620-623, 2002
The first study addressing the small-scale dynamics in the geodynamo by analyzing magnetic field variations over 20 years, suggesting patterns linked to geodynamo behavior, possibly before geomagnetic reversals. (338 cit.)

Alexandrescu M. et al., Worldwide analysis of geomagnetic jerks, *J. Geophys. Res*., 101, 21975-21994, 1996.
The novelty of this study lies in its global approach to detecting and characterizing geomagnetic jerks using wavelet analysis, identifying and characterizing seven events across the globe in the 20th century.
N.B. At that time M. Mandea's name was Alexandrescu. (193 cit.)

1) ACADEMIC CV - 2025

Professional	Personal	
Physicist CNAP (Conseil National des Astronomes et Physiciens) CNES - Centre National d'Etudes Spatiales 2 Place Maurice Quentin, 75039 Paris Cedex 01, France Email: mioara.mandea@cnes.fr Web: www.cnes.fr Web: www.mioara-mandea.eu - researcherID (ISI): E-4892-2012 - https://orcid.org/0000-0002-4300-981X - h-index: 42 (WoS); 50 (ResearchGate); 53 (GoogleScholar) - publications: 290+ publications & 470+ abstracts (end 2024) - citations: 12000+ (end 2024)	Citizenship: French/Romanian Address: 52, Rue Alleray 75015 Paris, France	

HISTORY OF EMPLOYMENT
Since 2022 – Head « Science Coordination » Department, Strategy Directorate, CNES, Paris
2011 – 2022 Solid Earth Program Manager – Directorate for Innovation, Applications, Science, CNES, Paris
2011 – 2011 Deputy-Director, European Center for the Arctic – Univ. Versailles St-Quentin-Yvelines, France
2009 – 2011 Physicist, Université Paris Diderot – Institut de Physique du Globe, Paris, France
2005 – 2009 Head of Section 2.3, Deutsche GeoForschungsZentrum Potsdam, Germany
2005 – 2009 Professor, Technische Universität Braunschweig, Germany
1994 – 2004 Physicist, Head of French National Magnetic Observatory, France
1991 – 1993 Various fellowships at Institute de Physique du Globe, Paris, France
1984 – 1994 Researcher, Geomagnetism Dep. Instit.of Geology and Geophysics, Bucharest, Romania
1982 – 1984 Engineer, Gravimetry Sec., Geological and Geophysical Survey, Bucharest, Romania

DEGREES
2001 HDR, "Habilitation à Diriger les Recherches", Physics of the Earth (Univ. Paris VII)
1996 PhD, Internal Geophysics (Institut de Physique du Globe de Paris)
1993 PhD, Geophysics and Geophysical Prospecting (Bucharest University)
1982 Engineering in Geology and Geophysics (Bucharest University)

RESEARCH INTERESTS
- Space observations: data exploitation of gravity and magnetic; involved in developing space geodesy techniques and French networks, Earth's system, in connection with some 100 French research teams
- Geo-potential fields observation, from modern observatory and satellites to historical archives
- Description of temporal and spatial changes of the geomagnetic field
- Adapting new mathematical tools to magnetic and gravity data analysis
- Studies on the Earth's Deep Interior
- Studies of the Martian, Moon, Mercury magnetic fields
- Studies of the geophysical changes in the Arctic region

RESEARCH TRACK RECORD
Since 1994: 290+ publications (195 ISI publications; 23 books or chapters, 72 reports and proceedings) and 470+ communications (conferences) (end 2024); N.B. the publications are signed under three different names (Alexandrescu M., Mandea Alexandrescu M., Mandea M.), due to her personal history. See http://www.mioara-mandea.eu/publications.htlm

TEACHING, SUPERVISOR OF PHD STUDENTS AND POSTDOCS

Students in three European countries attended the lectures, and 15 worldwide students (France, Germany, US, Romania, Croatia, Algeria, Indonesia, Portugal) obtained their PhD under her guidance. Mioara Mandea was CNES Manager for 25 Post-docs and 18 PhDs grants (2011-2022). See list in Section 4 below.

AWARDS AND HONORS

2024 Prix Dolomieu, Académie de Science, Paris
2024 Honorary Fellow, The Geological society of India
2024 Union Fellow, American Geophysical Union (AGU)
2023 Officier de l'Ordre National du Mérite - Décret 23/11/2022
2022 Emil Wiechert Medal, Deutsche Geophysikalische Gesellschaft, Germany
2022 Fellow, the European Academy of Sciences
2021 Corresponding Member, Bureau des Longitudes – Académie de Science, Paris
2020 Honorary Citizen, Comanesti, Romania
2019 ERC Synergy Grant "GRACEFUL"
2019 Member of Russian Academy of Science
2018 Member, Académie Royale de Belgique
2018 Petrus Peregrinus Medal, European Geosciences Union (EGU)
2017 Chevalier - Ordre National du Mérite - Décret 14/11/2016
2015 Member, Academia Europea
2014 International Award, American Geophysical Union (AGU)
2008 Titular Member of the Academy of Romanian Scientists
2000 Commemorative Medal, Slovak Academy of Sciences
2000 Botezatu Prize, Romaniae Scientiarum Societas
1998 Hepites Prize, Romanian Academy
1997 Van Straelen Prize, French Geological Society

COORDINATOR OF PROJECTS

2020-present PI of the ERC Synergy Grant of the EU, project GRACEFUL (GRavimetrie, mAgnetisme and CorE Flow), end in August 2025 (>35 researchers)

2005-2020 Main Achieved Projects

- 3D Earth (ESA): 3D Earth – A Dynamic Living Planet
- EPOS (EU): European Plate Observing System (TCS "Satellite Data")
- PlanetMag (D): Coordinator Planetary Magnetism, DFG-Schwerpunktprogramms 1488
- Geotechnologien (D): Developing tools to improve CHAMP data processing and geomagnetic field descriptions
- Swarm (ESA/EADS): End-to-end simulatior and participation in definition of this multi-satellite mission
- Magflotom (EU): Ocean and core flows from the high-resolution magnetic data
- WDMAM (IAGA/CGMW): World Digital Magnetic Anomaly Map
- Inkaba (D/SA): Studies of the anomalous behavior of the magnetic field over Southern African Continent.

EXPERTISE, NATIONAL AND INTERNATIONAL FUNCTIONS

Since 2023 President-Elect, International Union of Geodesy and Geophysics (IUGG)
Since 2021 French POC, Committee on Space Research (COSPAR)

Since 2018 Member, Scientific Advisory Council of the GFZ, Germany
Since 2011 Member, National Administrative or Scientific Councils (OSUC, OPGC, IPEV, etc), France
Since 2008 President, Geophysical Maps Commission (CGMW), France
2018 – 2023 President, Int. Assoc. of Geomagnetism and Aeronomy (IAGA)
2018 – 2021 Chair, Outreach Committee, European Geosciences Union (EGU)
2013– 2021 Member "service extraordinaire", Bureau des Longitudes – Académie de Science, France
2015 – 2018 President, Scientific Council, International Space Science Institute (ISSI), Switzerland
2009 – 2018 Secretary General, Int. Assoc. of Geomagnetism and Aeronomy (IAGA)
2014 – 2018 Vice-President, Société Française de Photogrammétrie et de Télédétection (SFPT), France
2013 – 2018 Member, Advisory Board CEED (UiO Oslo), Norway
2013 – 2016 Member, Advisory Board MED-SUV project (FP7), Italy
2012 – 2016 Secretary General, European Geosciences Union (EGU)
2010 – 2012 Chair, Education Award Committee, American Geophysical Union (AGU)
2008 – 2010 Member, Education Award Committee, American Geophysical Union (AGU)
2007 – 2011 President, Earth Magnetism and Rock Physics Division, European Geosciences Union (EGU)
2007 – 2009 Member, Executive Committee of Int. Assoc. of Geomagnetism and Aeronomy (IAGA)
2003 – 2009 President, "Solid Earth" group - TOSCA Committee (CNES), France
2003 – 2007 Co-chair, Division V of Int. Assoc. of Geomagnetism and Aeronomy (IAGA)
1999 – 2003 Chair, Working Group V-8 of Int. Assoc. of Geomagnetism and Aeronomy (IAGA)
2002 – 2006 Chair, French National Committee of Geomagnetism and Aeronomy, France
1997 – 2006 Member, Administrative and Scientific Council of Instit. de Physique du Globe de Paris, France

EDITORIAL ACTIVITIES

Surveys in geophysics (2009 -); Solid Earth (2010 - 2022); PEPI & EPS (for special issue)

Reviewer for manuscripts submitted to: *Science, Nature Geoscience, Geophysical Research Letters*, *Journal of Geophysical Research*, *Earth, Planets and Space*, *Geophysical Journal International*, *Physics of the Earth and Planetary Interiors*, *Earth and Planetary Science Letters*, *Annale Geophysica*

Referee for projects submitted to: ERC, National Science Foundations (France, Romania, Norway, Switzerland, Lithuania, Russia, USA, etc)

2) MAJOR ACCOMPLISHMENTS

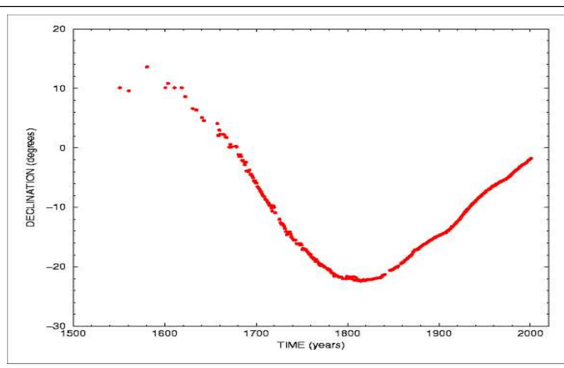
Mioara Mandea’s great passion has been and remains terrestrial magnetism, a highly complex phenomenon. As one of the rare "windows" into the Earth's liquid core, the geomagnetic field plays a crucial role in the Sun-Earth relationship through magnetic storms—phenomena that bring the stunning beauty of auroras but also pose significant risks to modern technologies (severe disruptions to power distribution networks, interruptions to GNSS systems, malfunctions in aircraft instruments, and damage to satellites). This nomination is driven by her passion for magnetism, a passion she shares with her colleagues and students through the joy of collaboration marked by enthusiasm, personal commitment, good humor, and the expertise that defines her geophysics community.

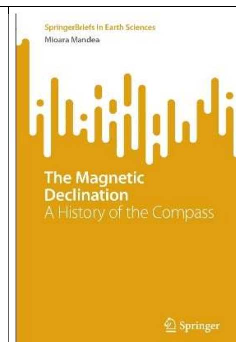
This part of nomination summarizes Mioara Mandea’s contributions to the field of geophysics and highlights the significance of her work through publications available on her website and included here (see List of Publications).

1. Observation and Modeling of the Magnetic Field: From the Compass to the Satellite

1.1. Magnetic Observations

Latitude, longitude, and magnetism during the age of great navigators... This activity is directly linked to her skills as a geophysicist. Observing the Earth's magnetic field at a single point, but over a long period of time, provides rich information about its temporal evolution. The compilation of over 450 years of data from the Paris region allowed her to present the world with the first magnetic series of Paris (Alexandrescu et al., 1996; Mandea and Le Mouel, 2016). This work not only enabled her to analyze one of the two longest geomagnetic data series but also offered a deep dive into the tumultuous history of France over the last five centuries (Alexandrescu et al., 1997). Having the opportunity to browse through ancient books also led her to discover a 1602 publication by Le Nautonier, the first to present a map showing the positions of the magnetic poles distinct from those of the geographic poles (Mandea, 2001). Additionally, the archives of the Bureau des Longitudes allowed her to trace advances in the field of geomagnetism over the last two centuries (Korte and Mandea, 2019). This work over several decades also led to the publication of a book dedicated to the history of the compass, where history and science intertwine over the past millennium (Mandea, 2022).





Temporal variation of magnetic declination in Paris since 1541 (left) (Mandea & Le Mouel, 2016) and the history of the compass as told in her book (right) (Mandea, 2022).

A geomagnetic observatory is tasked with ensuring the long-term continuity of magnetic field measurements. She has been deeply involved in such efforts, both in France and in Germany. Modern observatories have been installed in locations that are sometimes difficult to access, such as Saint Helena Island or deep Siberia. Mioara Mandea has taken responsibility for these measurements in France, as well as at the European level, as a founding member of the MagNetE program, a European network aimed at standardizing measurements across all countries in the community. Similarly, she initiated the COMPASS project, which focused on the same type of measurements in the Southern African subcontinent (South Africa, Namibia, and Botswana). She also notes an expedition to the Far North dedicated to locating the Magnetic North Pole—the first of its kind and the only woman to have participated in such missions). Taking part in these measurement campaigns was a unique experience for her!

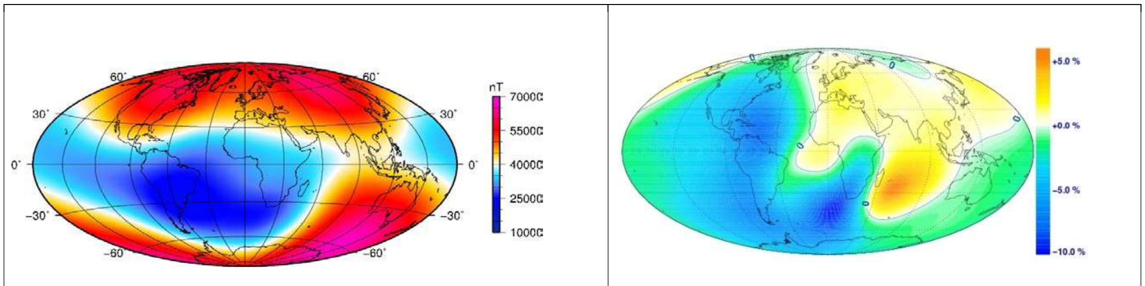
		*Measurement Campaigns:* *Localization of the Magnetic North Pole (left)* *Observation of Changes in the Earth's Magnetic Field in Namibia (right)*

1.2. Spatial and Temporal Modeling of the Geomagnetic Field

Magnetic satellites allow us to continue the magnetic adventure. Mioara Mandea has participated in the exploitation of satellite data provided by three major magnetic satellites (Olsen et al., 2006). It is a great privilege for her to work with data from the Danish satellite Ørsted (launched in 1999), highly anticipated after the success of the first MAGSAT satellite launched by NASA in 1979. She also shared scientific responsibility for another German satellite, CHAMP (2000-2009) (Mandea et al., 2010).

The present and future hold great promise for the measurement and study of the Earth's magnetic field thanks to the ESA's Swarm mission. Launched in November 2013, the Swarm mission provides unprecedented insights into the complex functioning of the Earth's magnetic field. The measurements taken since its launch confirm the general trend of a decrease in the field's intensity, especially in the Atlantic Hemisphere (could this indicate a new magnetic field reversal?). Recent measurements also confirm the movement of the magnetic North Pole toward Siberia. She has been deeply involved in the initiation of the project and remains actively engaged in the monitoring of the absolute magnetometers and data exploitation, being one of the authors of the latest geomagnetic field model, International Geomagnetic Reference Field (IGRF 13) (Alken et al., 2020).

Naturally, Mioara Mandea then turned to the exploitation and interpretation of these data. Part of her work has been linked to her role as the chair of an International Association of Geomagnetism and Aeronomy (IAGA) working group dedicated to the modeling of the magnetic field, including its internal and external sources. She has a particular interest in the temporal variations of the Earth's core field, offering a fresh perspective on these secular variations. For instance, the considerable variation of the geomagnetic field in the Atlantic Hemisphere was confirmed: for the first time, it was shown that its intensity decreased by about 10% in the last quarter of the 20th century (Korte et al., 2009). This represents a dramatic change in the dynamics of our planet, occurring in a region where the magnetic field already exhibits its lowest values: the South Atlantic Anomaly.



The magnetic field intensity in 2015 – with the extent of the South Atlantic Anomaly (left) and its variations over 30 years (2010–1980) (right) (Thebault, Mandea et al., 2016).

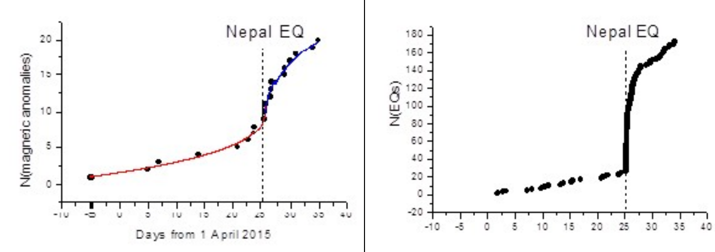
Part of Mioara Mandea's research focuses on the very rapid changes in the trend of secular variation—geomagnetic jerks. She was the first to apply the elegant wavelet technique to the analysis of these jerks, whose origin remains mysterious (Alexandrescu et al., 1995; 1996), and discovered new events (Bellanger et al., 2001). Her results highlighted an unexpected behavior of the jerks: a rather regional distribution rather than a global one. It is important to note that until recently, they were only well-described from observatory data series (Chambodut & Mandea, 2005). She was the first to detect such a phenomenon in data from the CHAMP satellite (Mandea & Olsen, 2006), introducing an original concept, the "virtual observatory," which has since become a recognized product within the scientific community and the ESA. This notable result has helped advance the understanding of their nature (Mandea & Olsen, 2009; Mandea et al., 2010; Mandea et al., 2015).

2. The Earth – An Active Planet

2.1. The Swarm Magnetic Mission in Search of Earthquakes

A major earthquake with a magnitude of 7.8 occurred on April 25, 2015, in Nepal. The three Swarm satellites of the ESA, being in orbits close to the area affected by the earthquake, allowed for the search of anomalous pre-seismic magnetic signals, likely related to lithosphere-atmosphere-ionosphere coupling. Using the series of magnetic anomalies detected in the Swarm data (during the night and in magnetically calm periods), she showed that the cumulative number of anomalies followed the same typical behavior of a critical system approaching its critical time, here the seismic event of April 25, 2015. It then recovered like the typical post-earthquake recovery phase. This result demonstrates an impressive similarity to the behavior obtained from seismic data analysis and reinforces the idea of a lithospheric origin for the satellite magnetic anomalies. This new study is a continuation of her pioneering work on the seismic signature in satellite magnetic data (Balasis and Mandea, 2007).

a) b)



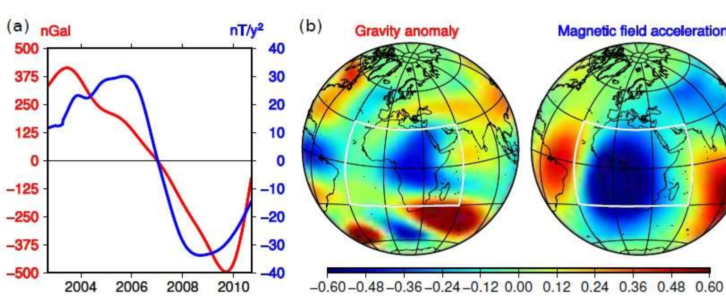
a) Cumulative number of magnetic anomalies detected by Swarm. The red and blue curves represent the best power law fits before and after the Nepal earthquake.

b) Cumulative number of earthquakes with magnitude M4+ in the Dobrovolsky region. (De Santis, Mandea et al., 2017).

2.2. The CHAMP and GRACE Missions and the Core-Mantle Boundary

Another study she initiated addresses changes at the core-mantle boundary, observed through magnetic and gravity fields. Using an analysis of eight years of data from the CHAMP satellite for the magnetic field and GRACE geoid model provided by CNES/GRGS, along with outputs from oceanic and hydrological models, she highlighted a common inter-annual variability between the acceleration of the Earth's magnetic field and gravity anomalies in a region centered on Africa, extending from the Atlantic Ocean to the Indian Ocean (Mandea et al., 2012). The region where this signal is detected exhibits very specific characteristics: on one hand, this is where a significant and long-term decrease in the intensity of the magnetic field from the core has been observed for several decades.

Recently, they proposed that the topography of the core-mantle boundary is in a state of dynamic equilibrium, mainly controlled by a dissolution/crystallization process between the silicate mantle and the liquid core—an absolute first. Because of continuous changes in the topography of this boundary, anomalies on the order of hundreds of nGal and tens of nT/yr^2 can be produced (Mandea et al., 2015).. These results and their significant geodynamic implications emphasize the great importance of Earth observation satellite missions—both current and future—for the modeling and understanding of the Earth's core. These studies also form the motivation behind the GRACEFUL project (GRavimetry, mAgnetism and CorE Flow), which was awarded the European Research Council (ERC Synergy) grant in 2019 and began in September 2020.



Common variability mode highlighted between magnetic acceleration and gravity.

a) The curves represent the time-varying, dimensionless variability of each field (gravity and magnetic acceleration).

b) The maps represent the dimensionless spatial pattern associated with the variability. (Mandea et al., 2015).

This project has already allowed us to surpass the initial goals and study the Earth system as a whole. A remarkable result was recently published (Cazenave et al., 2023). An oscillation of about 6 years has been reported in the movements of the fluid core, the magnetic field, the Earth's rotation, and crustal deformations. Recently, a 6-year cycle has also been detected in several climatic parameters (e.g., sea level, surface temperature, precipitation, terrestrial ice, terrestrial hydrology, and atmospheric angular momentum). In this study, we suggest that the 6-year oscillations detected in the depths of the Earth, the mantle rotation, and the atmosphere are interconnected, and that previously proposed central processes driving the 6-year cycle in the Earth's rotation also cause the atmosphere to oscillate with the mantle, inducing fluctuations in the climate system with similar periodicities.

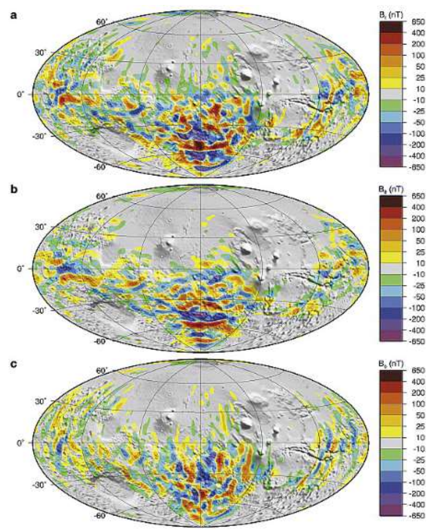
2.3. More applied studies

Mioara Mandea has investigated Arctic change from a geophysical perspective using gravity and magnetic data (Mandea and Gaina, 2012); contributed to understanding whether and how the weak geomagnetic field in the South Atlantic (the South Atlantic anomaly) can result in adverse effects on satellite tracking (via radiation doses to onboard oscillators, Willis et al., 2016) and investigated the role of time variations in the core magnetic field on space weather effects (Mandea and Purucker, 2018).

3. Other Worlds...

3.1. The Terrestrial Planets

Mioara Mandea has applied her magnetometry expertise to data from satellite missions to other solar system objects, especially Mars, Mercury and our Moon. With her former students (Langlais et al., 2004, Quesnel et al., 2006, Isac et al., 2016), she has contributed significantly to using the observations to advance our understanding of how planetary dynamos operate, why some are relatively short-lived whereas others have continued through the lifetime of the solar system. The initial results showed that Mars does not possess a significant global magnetic field. It was demonstrated that variations in the Martian magnetic field, of lithospheric origin, are highly significant from one location to another. The majority of the field's sources are located south of the so-called "dichotomy boundary". The crustal anomalies south of this boundary are especially pronounced, particularly in the Terra Sirenum region: at an altitude of about 400 km, the magnetic anomalies are approximately 20 times stronger than those of a similar origin on Earth at a comparable altitude.



The three components of the Martian magnetic field at 200 km altitude predicted by the model proposed by Langlais et al., 2003.

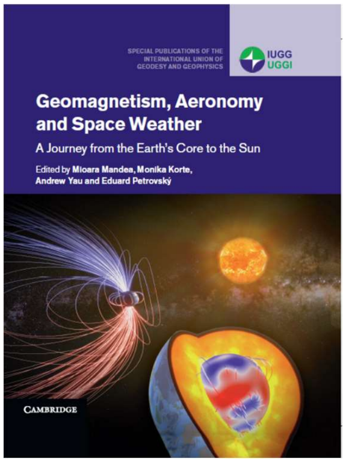
The magnetic field is weak (within ±10 nT) almost everywhere North of the crustal dichotomy (also plotted). Only two features North of the crustal dichotomy are to be noted. The largest magnetic anomalies are observed over Terra Cimmeria and Terra Sirenum. The largest craters, Isidis Planitia, Argyre and Hellas, are not associated with large magnetic anomalies, nor are the largest volcanoes of the Northern hemisphere (Tharsis Montes, Olympus Mons, and Elysium Mons).

The magnetic field of Mercury is partially characterized by the first measurements provided by the MESSENGER probe. Launched by NASA in 2004 and placed in orbit in 2011, the probe crashed onto Mercury's surface in April 2015 after exhausting the fuel used to maintain its orbit. The data from MESSENGER revealed that Mercury still has an intrinsic magnetic field, but it is weaker than in the past. Its finer characterization will be made possible by the ESA's BepiColombo mission, which was successfully launched in 2018. Mercury has become a target of her research. Mioara Mandea is now a Co-Investigator on ESA's BepiColumbo orbiter mission to Mercury, as a Co-I for the planetary magnetometer. (Heyner et al., 2021). Her roles will include further development of "Virtual Observatory" concept for use by the science team in constraining Mercury's interior structure as well as the dynamo process that generates the internal magnetic field.

3.2. From the Earth's Core to the Sun

The International Association of Geomagnetism and Aeronomy (IAGA)[1] aimed to prepare a book on the state of the art, new results, and perspectives in geomagnetism and aeronomy. This publication is part of the "IUGG Special Edition" series in collaboration with Cambridge University Press. It provides a unique and comprehensive overview of the knowledge surrounding the generation of the Earth's magnetic field, its history, its current state, and its response to external forces, highlighting important applications and societal implications.

[1] https://iaga-aiga.org/about/



The centenary of the International Union of Geodesy and Geophysics (IUGG) in 2019 provides a wonderful opportunity to bring together the latest scientific results from the global scientific community. This book reviews recent advances in the fields of geomagnetism, aeronomy, and space weather. Mioara Mandea was deeply involved in the editing of this book, serving as the lead editor for "Geomagnetism, Aeronomy, and Space Weather – A Journey from the Core to the Sun" (Mandea et al., 2020).

4. GRACEFUL – the project of cohesion

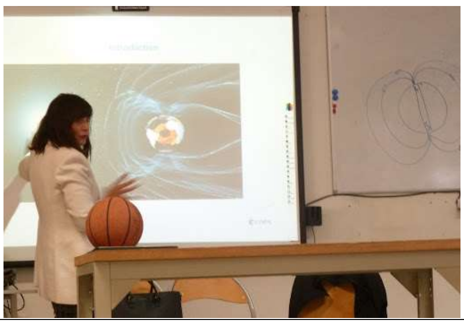
In 2020, Dehant, Mandea, and Cazenave were awarded an ERC Synergy Grant to collaborate with a team on a groundbreaking project to unravel the processes shaping Earth's deep interior and its evolution, particularly the dynamics of the fluid, iron-rich outer core. By combining satellite and ground-based observations, their goal was to overcome the limitations of each method and achieve a holistic understanding of core dynamics.

- The time-dependent magnetic field, primarily generated in the core, provides invaluable insights into fluid motions at the core's surface over decadal and subdecadal timescales.
- Time-dependent gravity field variations reveal changes in Earth's mass distribution, offering glimpses into the core's flow, though surface contributions like water cycle changes and land ice loss often dominate these signals.
- Earth's rotation changes, such as variations in the length of day, polar motion, and nutations, are strongly linked to core fluid motions through angular momentum exchange between the core and mantle.

The GRACEFUL project leverages the synergy of these diverse datasets—magnetic, gravitational, and rotational—to explore core dynamics in unprecedented detail. By developing cutting-edge algorithms and sophisticated numerical models, the team has advanced our understanding of core fluid motions and the complex mechanisms at the core-mantle boundary. This innovative approach is revolutionizing geophysical research and has revealed an unexpected insight: these processes not only influence Earth's deep interior but also have profound impacts on the entire Earth system, from the core to the climate, confirming the intricate interconnection between the planet's fluid layers and its solid components.

5. Outreach activities - Promoting Early Carrier Scientists and Women in Geosciences

Mioara Mandea has been fortunate to be mentored by remarkable individuals. In turn, she places great importance on passing on her passion for science to the younger generation. As a patron of the Pariscience International Scientific Film Festival (2015), she spoke about her profession to several classes of middle school students. She also participated in initiatives as "*L'espace c'est classe*" (2015, 2018, 2023, Paris[2]) or "*Scientific Game Jam*" (2023, Toulouse[3]). Once again, she was pleased to find a great interest in geosciences among the students. The future geophysicists are here.



With a white board and a pen, with a ball and the hands, Mioara Mandea explains the Earth's magnetic field to a large audience, from teenagers to seniors (CNES – L'space c'est classe, 2015, Café des sciences, 2023).

Mioara Mandea is already involved in a number of actions supporting Early Carrier Scientists and women in science. She continues to treat those who come after her in the same way that her professors and mentors taught her. The European Geosciences Union (EGU), in which she has been and continues to be deeply involved, runs a network platform, including one dedicated to women in geosciences. As President of the Outreach Committee of the EGU (2018-2022), President of the International Association of Geomagnetism and Aeronomy (2019-2023), and President-Elect of the International Union of Geodesy and Geophysics (2023-2027)[4], she has taken on roles that allow her to increase the visibility of Early Carrier Scientists.

Mioara Mandea has demonstrated exceptional dedication to supervising students and postdoctoral researchers (see List of supervised PhD and Posdocs), fostering their growth both academically and professionally. Her commitment extends beyond the immediate mentorship period, as she maintains strong, lasting relationships with her former mentees. This enduring connection has not only created a supportive professional network but has also contributed to the success of her mentees, the majority of whom now hold prominent positions in the field. Many have risen to become directors of leading institutions, reflecting the high caliber of training and guidance she provided. Her efforts underscore her role as a transformative mentor and leader in shaping the next generation of experts in her discipline.

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[2] https://cnes.fr/education/espace-cest-classe
[3] https://videotheque.cnes.fr/index.php?urlaction=doc&id_doc=39263&rang=1&id_panier=
[4] https://iugg.org/about/iugg-administration/

3) LIST OF PUBLICATIONS

2024

Papers (ISI journals)
· Lim, K. W., R. Deguen, D. Cébron, A. Schulze, **M. MANDEA**, Compaction-driven convection in the growing inner core, Geophysical Research Letters, 51, https://doi.org/10.1029/2024GL110749, 2024.
· Balasis, G., A. De Santis, C. Papadimitriou, A.Z. Boutsi, G. Cianchini, O. Giannakis, S.M. Potirakis, **M. MANDEA**, Swarm Investigation of Ultra-Low-Frequency (ULF) Pulsation and Plasma Irregularity Signatures Potentially Associated with Geophysical Activity, Remote Sens., 16, 3506, https://doi.org/10.3390/rs16183506, 2024.
· Lecomte, H., S Rosat, **M. MANDEA**, Gap filling between GRACE and GRACE-FO missions: assessment of interpolation techniques, Journal of Geodesy, 98, https://doi.org/10.1007/s00190-024-01917-3, 2024.
· Ginisty, F., F. Wrobel, R. Ecoffet, **M. MANDEA**, A. Michez, N. Balcon, M. Ruffenach, J. Mekki, South Atlantic anomaly evolution seen by the proton flux. J. Geophys. Res. Space Physics, 129, e2023JA032186, https://doi.org/10.1029/2023JA032186, 2024.
Proceedings and Reports
· **MANDEA, M.**, P. Ultre-Guerard, Editorial, French Report to COSPAR 2024, https://cosparhq.cnes.fr/assets/uploads/2024/06/France_2024.pdf, 2024.

2023

Papers (ISI journals)
· Lecomte, H., S. Rosat, **M. MANDEA**, M. Dumberry, Gravitational constraints on the Earth's inner core differential rotation, *Geophys. Res. Lett.*, 50, e2023GL104790, https://doi.org/10.1029/2023GL104790, 2023.
· Saraswati, A. T., O. de Viron, **M. MANDEA**, Earth's core variability from the magnetic and gravity field observations, *Solid Earth*, 14, 1267–1287, https://doi.org/10.5194/se-14-1267-2023, 2023.
· Firsov, I., D. Jault, N. Gillet, J. Aubert, **M. MANDEA**, Radial shear in the flow at the Earth’s core surface, *Geoph. J. Int.*, 235, 2524-2539, https://doi.org/10.1093/gji/ggad376, 2023.
· Pfeffer, J., A. Cazenave, S. Rosat, L. Moreira, **M. MANDEA**, V. Dehant, B. Coupry, A 6-year cycle in the Earth system, *Global and Planetary Change*, 229, https://doi.org/10.1016/j.gloplacha.2023.104245, 2023.
· Schwaiger, T., N. Gillet, D. Jault, M. Istas, **M. MANDEA**, Wave-like motions and torques in Earth's core as inferred from geomagnetic data: A synthetic study, *Phys. Earth Planet. Int.*, 346, 107104, https://doi.org/10.1016/j.pepi.2023.107104, 2023.
· Cazenave, A., J. Pfeffer, **M. MANDEA**, and V. Dehant, ESD Ideas: A 6-year oscillation in the whole Earth system?, *Earth Syst. Dynam.*, 14, 733–735, https://doi.org/10.5194/esd-14-733-2023, 2023.
· Lecomte, H., S. Rosat, **M. MANDE**A, J.-P. Boy, & J. Pfeffer, Uncertainty of low-degree space gravimetry observations: Surface processes versus Earth's core signal, *J. Geophys. Res.: Solid Earth*, 128, e2023JB026503, https://doi.org/10.1029/2023JB026503, 2023.

· Pollet, A., D. Coulot, R. Biancale, F. Perosanz, S. Loyer, J.-M. Marty, S. Glaser, V. Schott-Guilmault, J.-M. Lemoine, F. Mercier, S. Nahmani and **M. MANDEA,** GRGS numerical simulations for a GRASP-like mission, *J. of Geodesy*., 97, 45, https://doi.org/10.1007/s00190-023-01730-4, 2023
· Schwaiger, T., D. Jault, N. Gillet, N. Schaeffer, **M. MANDEA**, Local estimation of quasigeostrophic flows in Earth's core, *Geoph. J. Int*., Vol 234, p 494–511, https://doi.org/10.1093/gji/ggad089, 2023.

2022

Papers (ISI journals)
· Lesur, V., N. Gillet, M.D. Hammer, **M. MANDEA,** Rapid variations of Earth's core magnetic field, *Surveys in Geophysics*, https://doi.org/10.1007/s10712-021-09662-4, 2022.
Books and Chapter in Books
· **MANDEA, M.**, The Magnetic Declination. A History of the Compass, ISBN: 978-3-031-09476-7, 116 p., Springer, 2022.
Proceedings and Reports
· **MANDEA, M.**, P. Ultre-Guerard, Editorial, Rapport *COSPAR 2022* https://sciencestechniques.cnes.fr/sites/default/files/drupal/202210/default/st_rapport-cospar-2022.pdf, 2022.

2021

Papers (ISI journals)
· Dumberry, M. and **M. MANDEA**, Gravity variations and ground deformations resulting from core dynamics, *Surveys in Geophysics*, https://doi.org/10.1007/s10712-021-09656-2, 2021.
· Alken, P., et al., including **M. MANDEA**, International Geomagnetic Reference Field: the thirteenth generation, *Earth, Planets and Space*, 73, 49, https://doi.org/10.1186/s40623-020-01288-x, 2021.
· Hayner, D., et al., including **M. MANDEA**, The BepiColombo Planetary Magnetometer MPO-MAG: What Can We Learn from the Hermean Magnetic Field?, *Space Science Reviews*, 217:52, https://doi.org/10.1007/s11214-021-00822-x, 2021.
· Leveque, T., C. Fallet, **M. MANDEA**, R. Biancale, J. M. Lemoine, S. Tardivel, S. Delavault, A. Piquereau, S. Bourgogne, F. Pereira Dos Santos, B. Battelier, Ph. Bouyer, Gravity field mapping using laser-coupled quantum accelerometers in space, *J. of Geodesy*, 95, 15, https://doi.org/10.1007/s00190-020-01462-9, 2021.

2020

Papers (ISI journals)
· **MANDEA, M.** V. Dehant, A. Cazenave, GRACE — Gravity Data for Understanding the Deep Earth's Interior, *Remote Sens.* 12(24), 4186, https://doi.org/10.3390/rs12244186, 2020.
· **MANDEA, M.**, The Core-Mantle Boundary as seen by Satellite Observations, *J Geol Soc India*, 95, 547–550, https://doi.org/10.1007/s12594-020-1480-6, 2020.
· Lopez, T., A. Cazenave, **M. MANDEA**, J. Benveniste, Guest Editorial: International Space Science Institute (ISSI) Workshop on Geohazards and Risks Studied from Earth

Observations, *Surveys in Geophysics*, GEOP-Special Issue on “Remote Sensing of Geohazards and Risks”, 41:1179–1183 https://doi.org/10.1007/s10712-020-09617-1, 2020.
· **MANDEA, M.** and A. Chambodut, Geomagnetic field processes and their implications for Space Weather, *Surveys in Geophysics*, GEOP-Special Issue on “Remote Sensing of Geohazards and Risks”, 41:1611–1627, https://doi.org/10.1007/s10712-020-09598-1, 2020.
· Benveniste, J., **M. MANDEA**, A. Melet, P. Ferrier, Earth Observations for Coastal Hazards Monitoring and International Services, *Surveys in Geophysics*, GEOP-Special Issue on “Remote Sensing of Geohazards and Risks”, 41:1185–1208, https://doi.org/10.1007/s10712-020-09612-6, 2020.
· Wardinski, I., D. Saturnino, H. Amit, A. Chambodut, B. Langlais, **M. MANDEA**, E. Thebault, Geomagnetic core field models and secular variation forecasts for the 13th International Geomagnetic Reference Field (IGRF-13), *Earth, Planets and Space*, https://doi.org/10.1186/s40623-020-01254-7, 2020.

Books/Chapter in Books

· **MANDEA, M.**, M. Korte, A. Yau, E. Petrovsky (Eds.), A Journey from the Earth's Core to the Sun *(Special Publications of the International Union of Geodesy and Geophysics)* 1st Edition, Cambridge University Press, ISBN-13: 978-1108418485, 2020.
· **MANDEA, M.**, C. Gaina, V. Lesur, Magnetic Modeling, Theory and Computation" *Encyclopedia of Solid Earth Geophysics, 2nd edition*, https://doi.org/10.1007/978-3-030-10475-7_232-1, 2020.
· **MANDEA, M.**, A. Isac, Geomagnetic Field, Measurement Techniques, *Encyclopedia of Solid Earth Geophysics, 2nd edition*, https://doi.org/10.1007/978-3-030-10475-7_117-1, 2020.

Proceedings and Reports

Blanc, M., et al., **M. MANDEA**, et al., Science objectives and observation system for the International Meridian Circle, *TAIKONG - ISSI-BJ Mgazine*, 2020.

2019

Papers (ISI journals)

· Korte, M. and **M. MANDEA**, Geomagnetism: from Alexander von Humboldt to Current Challenges, *G3: Geochemistry, Geophysics, Geosystems*, https://doi.org/10.1029/2019GC008324, 2019.
· Roman, S., A. Soloviev, A. Gvishiani, V. Getmanov, **M. MANDEA**, A. Petrukhin, I. Yashin, A. Obraztsov, A combined analysis of geomagnetic data and cosmic ray secondaries for the September 2017 space weather event studies, *Russian Journal of Earth Sciences*, https://doi.org/10.2205/2019ES000671, 2019.
· Domingos, J., M.A. Pais, D. Jault, **M. MANDEA**, Temporal resolution of internal magnetic field modes from satellite data, *Earth, Planets and Space*, 71:2, https://doi.org/10.1186/s40623-018-0983-5, 2019.

Proceedings and Reports

· Lévèque, T., C. Fallet, **M. MANDEA**, R. Biancale, J. M. Lemoine, S. Tardivel, M. Delpech, G. Ramillien, J. Panet, S. Bourgogne, F. Pereira Dos Santos, Ph. Bouyer, Correlated atom accelerometers for mapping the Earth gravity field from Space *Proceedings Volume 11180, International Conference on Space Optics — ICSO 2018,* https://doi.org/10.1117/12.2535951, 2019.

2018

Papers (ISI journals)

· **MANDEA, M.** and M. Purucker, The Varying Core Magnetic Field from a Space Weather Perspective, *Space Sci Re,* 214:11, https://doi.org/10.1007/s11214-017-0443-8, 2018.
· Saturnino, D., B. Langlais, H. Amit, F. Civet, **M. MANDEA**, E. Beucler, Combining virtual observatory and equivalent source dipole approaches to describe the geomagnetic field with Swarm measurements, *Phys. Earth Planet. Int.*, 276, 118-133, https://doi.org/10.1016/j.pepi.2017.06.004, 2018.
· Dobrica, V., C. Demetrescu, **M. MANDEA**, Geomagnetic field declination: from decadal to centennial scales, *Solid Earth*, 9, 491-503, https://doi.org/10.5194/se-9-491-2018, 2018.
· Domingos, J., D. Jault, A. Pais, **M. MANDEA**, The South Atlantic Anomaly throughout the solar cycle, *Earth and Planetary Science Letters*, 473, 154-163, https://doi.org/10.1016/j.epsl.2017.06.004, 2018.
· Tair, S., Y. Yahiat, M. Hamoudi, V. Lesur, **M. MANDEA**, I. Rus, Geomagnetic field residuals from CHAMP satellite: essential for revealing unmodelled sources, *Arabian Journal of Geosciences*, vol. 11(1), https://doi.org/10.1007/s12517-017-3236-1, 2018.

Proceedings and Reports

MANDEA, M., Solid Earth perceived by Form@ter and SENTINEL satellites, *CNES Raport to COSPAR, 42nd Scientific Assembly*, 14-15, 2018.

2017

Papers (ISI journals)

· De Santis, A., G. Balasis, F.J. Favon-Carrasco, G. Cianchini, **M. MANDEA**, Potential earthquake precursory pattern from space: The 2015 Nepal event as seen by magnetic Swarm satellites, *Earth and Planetary Science Letters*, 461, 119-126, https://doi.org/10.1016/j.epsl.2017.06.004, 2017.

Papers (further journals)

MANDEA, M., La cartographie et les systèmes satellitaires : quelques applications récentes, *Géologues*, 193, 27-30, 2017.

2016

Papers (ISI journals)

· Balasis, G., S.M. Potiralis, **M. MANDEA**, Investigating Dynamical Complexity of Geomagnetic Jerks Using Various Entropy Measures, *Frontiers in Earth Science*, 68:108, https://doi.org/10.1186/s40623-016-0484-3, 2016.
· Willis, P., M. B. Heflin, B. J. Haines, Y. E. Bar-Sever, W. I. Bertiger, **M. MANDEA**, Is the Jason-2 DORIS oscillator also affected by the South Atlantic Anomaly?, *Advances in Space Research,* 2617–2627, https://dx.doi.org/10.1016/j.asr.2016.09.015, 2016.
· Tozzi, R., **M. MANDEA**, and P. De Michelis, Unmodelled magnetic contributions in satellite-based models, *Earth, Planets and Space*, https://doi.org/10.3389/feart.2016.00071, 2016.

· Korte, M. and **M. MANDEA**, Geopotential field anomalies and regional tectonic features – two case studies: southern Africa and Germany, *Solid Earth,* https://doi.org/10.5194/se-2015-132, 2016.
· **MANDEA, M.** and J.-L. Le Mouel, After some 350 years – zero declination again in Paris, *Hist. Geo Space Sci.,* https://doi.org/10.5194/hgss-7-73-2016, 2016.

Proceedings and Reports

· **MANDEA, M.**, Solid Earth Program, *CNES Raport to COSPAR, 41st Scientific Assembly*, 62-65, 2016.
· **MANDEA, M.**, SWARM - Monitoring the Earth's magnetic field, *CNES Raport to COSPAR, 41st Scientific Assembly*, 66-67, 2016.
· **MANDEA, M.**, From SPOT to PLEIADES: continously observing the Earth, *CNES Raport to COSPAR, 41st Scientific Assembly*, 68-69, 2016.
· Fallet, C., J.-F. Mahfouf, J. F., A. Hauchechrne, R. Mathieu, R. T. Martin, N. Capet, **M. MANDEA**, Future Nanosatellite Constellation for Radio Occultation Measurements Living Planet Symposium, Proceedings of the conference Prague, Czech Republic, ESASP Volume 740, ISBN: 978-92-9221-305-3, /2016.

2015

Papers (ISI journals)

· **MANDEA, M.**, C. Narteau, I. Panet, and J.-L. Le Mouel, Gravimetric and magnetic anomalies produced by dissolution-crystallization at the core-mantle boundary, *J. Geophys. Res. Solid Earth*, 120, https://doi.org/10.1002/2015JB012048, 2015.
· Verbanac, G., **M. MANDEA**, M. Bandić, and S. Subašić, Magnetic observatories: biases over CHAMP satellite mission, *Solid Earth*, 6, 775-781, https://doi.org/10.5194/se-6-775-2015, 2015.
· Isac, A., **M. MANDEA**, M. Purucker, B. Langlais, A comparative analysis of the magnetic field signals over impact structures on the Earth, Mars and the Moon, *Advances in Space Research*, Volume 57, Issue 1, 477-492, https://doi.org/10.1016/j.asr.2015.11.019, 2015.
· Thebault, E., et al. **M. MANDEA**, International Geomagnetic Reference Field: the 12th generation, *Earth, Planets and Space*, 67:79, https://doi.org/10.1186/s40623-015-0228-9, 2015.
· Saturnino, D., B. Langlais, F. Civet, E. Thebault, **M. MANDEA**, Main field and secular variation candidate models for the 12th IGRF generation after 10 months of Swarm measurements, *Earth, Planets and Space*, 67:96, https://doi.org/10.1186/s40623-015-0262-7, 2015.

Papers (further journals)

· Pollet, A., D. Coulot, F. Deleflie, M. Capderou, R. Biancale and **M. MANDEA**, Application d'algorithmes genetiques a la determination d'orbites optimales pour GRASP, *XYZ, revue AFT, 144*, 44-53, 2015.

Proceedings and Reports

Ostanciaux, E., M. Diament, C. Lasserre, R. Grandin, **M. MANDEA**, O. Jamet, GDM: the Ground Deformation Monitoring, *Applications of Satellite Earth Observations: Serving Society, Science, & Industry*, 148-151, [FULL REPORT], 2015.

2014

Papers (ISI journals)

· Panet, I., G. Pajot-Metivier, M. Greff-Lefftz, L. Metivier, M. Diament, **M. MANDEA**, Mapping the mass distribution of Earth's mantle using satellite-derived gravity gradients, *Nature Geoscience*, https://doi.org/10.1038/ngeo2063, 2014.
· Zubaidah, T., M. Korte, **M. MANDEA**, M. Hamoudi, New insights into regional tectonics of the Sunda–Banda Arcs region from integrated magnetic and gravity modeling, *Journal of Asian Earth*, 80:172–184. https://doi.org/10.1016/j.jseaes.2013.11.013, 2014.

Books/Chapter in Books

· Soloviev, A., A. Khokhlov, E. Jalkovsky, A. Berezko,A. Lebedev, E. Kharin, I. Shestopalov, M. Nisilevich,V. Nechitailenko, A. Rybkina, O. Pyatygina, A. Shibaeva, V. Kuznetsov, T. Bondar, N. Pushkov, **M. MANDEA**, J. Mabie, *The Atlas of the Earth's Magnetic Field, Digital Atlas*, 360 pages, CGMW, 2014.

Proceedings and Reports

· **MANDEA, M.**, Solid Earth Program, CNES Raport to COSPAR, *40th Scientific Assembly*, 94-95, 2014.
· Panet, I., G. Pajot-Metivier, M. Greff-Lefftz, L. Metivier, M. Diament, **M. MANDEA**, GOCE gradients: probing Earth's interior, CNES Raport to COSPAR, *40th Scientific Assembly*, 96-97, 2014.

Miscellaneous

MANDEA M. and T.I. Pulkkinen, Multi-Disciplinary Arctic Research for Science and Society, *Surv. Geophys.*, 35:1093-1094, DOI 10/1007/s10712-014-9301-3, 2014.

2013

Papers (ISI journals)

· Khokhlov, A., J.-L. Le Mouel, and **M. MANDEA**, Contribution to solving the orientation problem for an automatic magnetic observatory, *Geosci. Instrum. Method. Data Syst.*, 2, 1-9, https://doi.org/10.5194/gi-2-1-2013, 2013.
· Qamili, E., A. De Santis, A. Isac, **M. MANDEA**, B. Duka, and A. Simonyan, Geomagnetic jerks as chaotic fluctuations of the Earth's magnetic field, *Geochem. Geophys. Geosyst.*, 114, https://doi.org/10.1029/2012GC004398, 2013.
· Zaourar, N., M. Hamoudi, **M. MANDEA**, G. Balasis, and M. Holschneider, Wavelet-based multiscale analysis of geomagnetic disturbance, *Earth Planets Space*, 65, 1525–1540, https://doi.org/10.5047/eps.2013.05.001, 2013.

Proceedings and Reports

· Carrere, V., X. Briottet, S. Jacquemoud, R. Marion, A. Bourguignon, M. Chami. M. Dumont, A. Minghelli-Roman, C. Weber, M.J. Lefevre-Fonollosa, **M. MANDEA**, HYPXIM: a second generation high spatial resolution hyperspectral satellite for dual applications, in *Proc. 5th Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS 2013)*, Gainesville (USA), 2013.

Miscellaneous

Lefevre-Fonollosa, M.-J., **M. MANDEA**, I. Fratter, HYPXIM : un spectro-imageur innovant pour les besoins scientifiques, la securite et la defense, *(http://www.sfpt.fr/hyperspectral/wpcontent/uploads/2013/10/presentation_hypxim.pdf)* France, 2013.

2012

Papers (ISI journals)

· **MANDEA, M.**, I. Panet, V. Lesur, O. de Viron, M. Diament, and J.-L. Le Mouel, Recent changes of the Earth's core derived from satellite observations of magnetic and gravity fields, *Proceedings of the National Academy of Sciences,* https://doi.org/10.1073/pnas.1207346109, 2012

· Suteanu, C. and **M. MANDEA**, Surface air temperature in the Canadian Arctic: scaling and pattern change, *Meteorology and Atmospheric Physics*, 118, 179-188, https://doi.org/10.1007/s00703-012-0206-8, 2012.

· Schachtschneider, R., M. Holschneider and **M. MANDEA**, Error distribution in regional modelling of the geomagnetic field, *Geophys. J. Int.,* 1015-1024, https://doi.org/10.1111/j.1365-246X.2012.05675.x, 2012.

· Hayn, M., I. Panet, M. Diament, M. Holschneider, **M. MANDEA**, A. Davaille, Waveletbased directional analysis of the gravity field: evidence for large-scale undulations, *Geophys. J. Int.*, vol. 189, 1430–1456, https://doi.org/10.1111/j.1365-246X.2012.05455.x, 2012.

· Duka, B., A. De Santis, **M. MANDEA**, A. Isac, E. Qamili, Geomagnetic jerks characterization via spectral analysis, *Solid Earth*, 3, 131-148, https://doi.org/10.5194/se-3-131-2012, 2012.

Books/Chapter in Books

· **MANDEA, M.** and C. Gaina, The Changing Faces of the Arctic. A glace at the top of the World from Magnetic and Gravity View, *Commission For The Geological Map of The World*, ISBN 978-2-917310-10-6, 2012.

Proceedings and Reports

· Lesur, V., H. Luhr, M. Rother, **M. MANDEA**, High-resolution CHAMP Magnetic Field modelling (HIREMAG-CHAMP); Long Time Series of Consistently Reprocessed High-Accuracy CHAMP / GRACE Products (LOTSE -- CHAMP / GRACE) Schlussbericht, 01.06.2009 - 31.05.2012; *Verbundprojekt FE III im Sonderprogramm GEOTECHNOLOGIEN Erfassung des Systems Erde aus dem Weltraum POF: PT1 Planet Earth: Global Processes and Change. Doctype: Report Section: 2.3 Earth's Magnetic Field*, 2012.

2011

Papers (ISI journals)

· Balasis, G., I.A. Daglis, A. Anastasiadis, C. Papadimitriou, **M. MANDEA**, K. Eftaxias, Universality in solar flare, magnetic storm and earthquake dynamics using Tsallis statistical mechanics, *Physica A*, 390, 341–346, https://doi.org/10.1016/j.physa.2010.09.029, 2011.

· Berezko, A. E., A. V. Khokhlov, A. A. Soloviev, A. D. Gvishiani, E. A. Zhalkovsky, and **M. MANDEA**, Atlas of Earth's magnetic field, *Russ. J. Earth. Sci.*, 12, ES2001, https://doi.org/10.2205/2011ES000505, 2011.

· Verbanac, G., **M. MANDEA**, B. Vršnak, S. Sentic, Evolution of Solar and Geomagnetic Activity Indices, and Their Relationship: 1960 – 2001, *Solar Phys.,* 271, 183–195, https://doi.org/10.1007/s11207-011-9801-y, 2011.

· Zaourar, N., M. Hamoudi, M. Holschneider, **M. MANDEA**, Fractal dynamics of geomagnetic storms, *Arabian Journal of Geosciences*, https://doi.org/10.1007/s12517-011-0487-0, 1-10, 2011.

Books/Chapter in Books

· **MANDEA, M.** and A. Isac, Geomagnetic Fields, Measurement Techniques, *Harsh K. Gupta (ed.), Encyclopedia of Solid Earth Geophysics*, https://doi.org/10.1007/978-90-481-8702-7, Springer Science+Business Media B.V., 2011.

· **MANDEA, M.**, C. Gaina, V. Lesur, Magnetic Modeling, Theory and Computation, *Harsh K. Gupta (ed.), Encyclopedia of Solid Earth Geophysics*, https://doi.org/10.1007/978-90-481-8702-7, Springer Science+Business Media B.V., 2011.
· **MANDEA, M.** and M. Korte (Ed.) *Geomagnetic Observations and Models,* IAGA Special Sopron Book Series 5, Springer, 343pp, 2011.

Proceedings and Reports

· Kotze, P., M. Korte, **M. MANDEA**, Polynomial Modelling of Southern African Secular Variation Observations Since 2005, *Data Science Journal*, 10, 95-101, 2011.

2010

Papers (ISI journals)

· **MANDEA, M.**, R. Holme, A. Pais, K. Pinheiro, A. Jackson, G. Verbanac, Geomagnetic Jerks: Rapid Core Field Variations and Core Dynamics, *Space Sci Rev,* 155, 147–175, https://doi.org/10.1007/s11214-010-9663-x, 2010.
· Asari, S., V. Lesur, **M. MANDEA**, Geomagnetic secular variation violating the frozen-flux condition at the core surface, *Earth Planets Space*, 62, 693–709, https://doi.org/10.5047/eps.2010.08.004, 2010.
· **MANDEA, M.**, M. Korte, A. Soloviev, A. Gvishiani, Alexander von Humboldt's charts of the Earth's magnetic, *Hist. Geo Space Sci.*, 1, 63–76, https://doi.org/10.5194/hgss-1-63-2010, 2010.
· Matzka, J., A. Chulliat, **M. MANDEA**, C.C. Finlay, E. Qamili, Geomagnetic Observations for Main Field Studies: From Ground to Space, *Space Sci Rev,* 155, 29–64, https://doi.org/10.1007/s11214-010-9693-4, 2010.
· Finlay, C. C., S. Maus, C. D. Beggan, T. N. Bondar, A. Chambodut, T. A. Chernova, A. Chulliat, V. P. Golovkov, B. Hamilton, M. Hamoudi, R. Holme, G. Hulot, W. Kuang, B. Langlais, V. Lesur, F. J. Lowes, H. Luhr, S. Macmillan, **M. MANDEA**, S. McLean, C. Manoj, M. Menvielle, I. Michaelis, N. Olsen, J. Rauberg, M. Rother, T. J. Sabaka, A. Tangborn, L. Toffner-Clausen, E. Thebault, A. W. P. Thomson, I. Wardinski Z. Wei, T. I. Zvereva, International Geomagnetic Reference Field: the eleventh generation, *Geophys. J. Int.*, 183, 1216–1230, https://doi.org/10.1111/j.1365-246X.2010.04804.x, 2010.
· Tarits, P. and **M. MANDEA**, The heterogeneous electrical conductivity structure of the lower mantle, *Phys. Earth Planet Int.,* 183, 115-125, https://doi.org/10.1016/j.pepi.2010.08.002, 2010.
· Olsen, N., **M. MANDEA**, T. J. Sabaka, L. Toffner-Clausen, The CHAOS-3 Geomagnetic Field Model and Candidates for the 11th Generation IGRF, *Earth, Planets, Space*, 62, 719-727, https://doi.org/10.5047/eps.2010.07.003, 2010.
· Lesur, V., I. Wardinski, S. Asari, B. Minchev, **M. MANDEA**, Modelling the Earth's core magnetic field under flow constraints, *Earth Planets Space*, Vol. 62, 503-516, https://doi.org/10.5047/eps.2010.02.010, 2010.
· Schachtschneider, R., M. Holschneider, **M. MANDEA**, Error distribution in regional inversion of potential field, *Geophys. J. Int.*, 181, 1428-1440, https://doi.org/10.1111/j.1365-246X.2010.04598.x, 2010.
· Verbanac, G., B. Vrsnak, M. Temmer, **M. MANDEA**, M. Korte, Four decades of geomagnetic and solar activity: 1960-2001, *Journal of Atmospheric and Solar-Terrestrial Physics*, 72, 7-8, 607-616, https://doi.org/10.1016/j.jastp.2010.02.017, 2010.
· Geese, A., **M. MANDEA**, V. Lesur, M. Hayn, Regional modelling of the southern African geomagnetic field harmonic splines, *Geophys. J. Int.*, 181, 1329-1342, https://doi.org/10.1111/j.1365-246X.2010.04575.x, 2010.

· Langlais, B., V. Lesur, M.E. Purucker, J. E. P. Connerney, **M. MANDEA**, Crustal Magnetic Fields of Terrestrial Planets, *Space Sci. Rev.*, 152, 1-4, 223-249, https://doi.org/10.1007/s11214-009-9557-y, 2010.
· Zubaidah, T., M. Korte, **M. MANDEA**, Y. Quesnel, B. Kanata, N. Arumdati, Geomagnetic field anomalies over the Lombok Island region: an attempt to understand the local tectonic changes, *International Journal of Earth Sciences (Geol. Rundsch.)*, 99, 5, 1123- 1132, https://doi.org/10.1007/s00531-009-0450-4, 2010.
· Hulot, G., A. Balogh, U. R. Christensen, C.G. Constable, **M. MANDEA**, N. Olsen, The Earth's Magnetic Field in the Space Age: An Introduction to Terrestrial Magnetism, Space Sci. Rev. 155, 1–7, https://doi.org/10.1007/s11214-010-9703-6, 2010.
· Hulot, G., C. C. Finlay, C. Constable, N. Olsen, **M. MANDEA**, The Magnetic Field of Planet Earth, *Space Sci. Rev.*, 152, 159-222, https://doi.org/10.1007/s11214-010-9644-0, 2010.
· **MANDEA, M.**, and V. Lesur, Geomagnetic field evolution. Changes on the way?, *Russ. J. Earth. Sci.*, 11, ES3010, https://doi.org/10.2205/2009ES000333, 2010.
· Glassmeier, K.-H., H.-U. Auster, D. Heyner, K. Okrafka, C. Carr, G. Berghofer, B.J. Anderson, A. Balogh, W. Baumjohann, P. Cargill, U. Christensen, M. Delva, M. Dougherty, K.-H. Fornacon, T.S. Horbury, E.A. Lucek, W. Magnes, **M. MANDEA**, A. Matsuoka, M. Matsushima, U. Motschmann, R. Nakamurac, Y. Naritaa, H. O'Brien, I. Richtera, K. Schwingenschuh, H. Shibuya, J.A. Slavin, C. Sotin, B. Stoll, H. Tsunakawa, S. Vennerstrom, J. Vogt, T. Zhang, The fluxgate magnetometer of the BepiColombo Mercury Planetary Orbiter. *Planetary and Space Science*, https://doi.org/10.1016/j.pss.2008.06.018, 2010.

Books/Chapter in Books

· **MANDEA, M.**, M. Holschneider, V. Lesur, H. Luhr, The Earth's Magnetic Field at the CHAMP Satellite Epoch, in System Earth via Geodetic-Geophysical Space Techniques, 475-526, Eds. F. Flechtner, T. Gruber, A. Guntner, M. Mandea, M. Rothacher, T. Schone, J. Wickert, Springer Berlin Heidelberg, ISBN978-3-642-10227-1 (Print) 978-3-642-10228-8 (Online), https://doi.org/10.1007/978-3-642-10228-8, 2010.
· System Earth via Geodetic-Geophysical Space Techniques, Eds. F. Flechtner, T. Gruber, A. Guntner, **M. MANDEA**, M. Rothacher, T. Schone, J. Wickert, Springer Berlin Heidelberg, ISBN978-3-642-10227-1 (Print) 978-3-642-10228-8 (Online), 550 pp., 2010.
· Geomagnetic Observations and Models, Eds: **M. MANDEA** and M. Korte, Springer-Verlagm, ISBN-10: 9048198577, ISBN-13: 9789048198573, 343 pp., 2010.

Proceedings and Reports

· Isac, A., **M. MANDEA**, M. Purucker, How Impacts Have Shaped the Magnetic Field of Earth, Mars and Moon, *ESA's Second Swarm International Science Meeting*, Proceedings, 2010.
· Yahiat, Y., M. Hamoudi, **M. MANDEA**, New and Ancient Satellite Data: A Source to Characterize Geomagnetic Jerks, *ESA's Second Swarm International Science Meeting*, Proceedings, 2010.
· Wardinski, I., J. Dostal, **M. MANDEA**, M. Thomas, Towards Monitoring Magnetic Signals Generated by Ocean Tides, *ESA's Second Swarm International Science Meeting*, Proceedings, 2010.
· Cianchini, G., A. De Santis, G. Balasis, **M. MANDEA**, E. Qamili, Entropy Based Analyses of Satellite Magnetic Signal Applied for Searching Possible Seismogenic Signatures in Ionosphere, *ESA's Second Swarm International Science Meeting*, Proceedings, 2010.

Miscellaneous

· Gaina, C., S. Werner, **M. MANDEA**, Magnetic and Gravimetric Anomaly Maps of the Arctic at the scale of 1:5 000 000, *Commission for the Geological Map of the World*, Paris, France, 2010.

2009

Papers (ISI journals)

· Olsen, N., **M. MANDEA**, T. J. Sabaka, L. Toffner-Clausen, CHAOS-2 A Geomagnetic Field Model Derived from one Decade of Continuous Satellite Data, *Geophys. J. Int.*, 179, 1477-1487, https://doi.org/10.1111/j.1365-11246X.2009.04386.x, 2009.
· Yahiat, Y., M. Hamoudi, **M. MANDEA**, What ancient scalar satellite data can tell us about the 1969 geomagnetic jerk?, *Earth, Planets and Space*, 61, 7, 885-894, https://doi.org/10.1186/BF03353199, 2009.
· Korte, M., **M. MANDEA**, J. Matzka, A historical declination curve for Munich from different data sources, *Phys. Earth Planet. Int.*, 177 (3-4), 161-172, https://doi.org/10.1016/j.pepi.2009.08.005, 2009.
· Leblanc, F., B. Langlais, T. Fouchet, S. Barabash, D. Breuer, E. Chassefiere, A. Coates, V. Dehant, F. Forget, H. Lammer, S. Lewis, M. Lopez-Valverde, **M. MANDEA**, M. Menvielle, A. Pais, M. Paetzold, P. Read, C. Sotin, P. Tarits, S. Vennerstrom, Mars Environment and Magnetic Orbiter Science and Measurement Objectives, *Astrobiology*, 9, https://doi.org/10.1089/AST.2007.022, 2009.
· Verbanac, G., M. Korte, **M. MANDEA**, Four decades of European geomagnetic secular variation and acceleration, *Annals of Geophysics*, 52, 487-503, https://doi.org/10.4401/ag-4605, 2009.
· Minchev, B., A. Chambodut, M. Holschneider, I. Panet, E. Scholl, **M. MANDEA**, G. Ramillien, Local multipolar expansions in potential field modeling, *Earth, Planets and Space*, Vol. 61, 1127-1141, https://doi.org/10.1186/BF03352965, 2009.
· Langlais, B., V. Lesur, M.E. Purucker, Jack E.P. Connerney, **M. MANDEA**, Crustal Magnetic Fields of Terrestrial Planets, *Space Science Reviews*, https://doi.org/10.1007/s11214-009-9557-y, 2009.
· Korte, M., **M. MANDEA**, H.-J. Linthe, A. Hemshorn, P. Kotze, E. Ricaldi, New geomagnetic field observations in the South Atlantic Anomaly region, *Annals of Geophysics*, 52, 65-81, https://doi.org/10.4401/ag-4631, 2009.
· Quesnel, Y., C. Sotin, B. Langlais, S. Costin, **M. MANDEA**, M. Gottschalk, J. Dyment, Serpentinization of the martian crust during Noachian, *Earth and Planetary Science Letters* 277, 184-193, https://doi.org/10.1016/j.epsl.2008.10.012, 2009.
· Quesnel, Y., U. Weckmann, O. Ritter, J. Stankiewicz, V. Lesur, **M. MANDEA**, B. Langlais, C. Sotin, A. Galdeano, Simple models for the Beattie Magnetic Anomaly in South Africa, *Tectonophysics*, https://doi.org/10.1016/j.tecto.2008.11.027, 2009.
· Langlais B., F. Leblanc, T. Fouchet, S. Barabash, D. Breuer, E. Chassefiere, A. Coates, V. Dehant, F. Forget, H. Lammer, S. Lewis, M. Lopez-Valverde, **M. MANDEA**, M. Menvielle, A. Pais, M. Paetzold, P. Read, C. Sotin, P. Tarits, S. Vennerstrom, G. Branduardi-Raymont, G. Cremonese, G.M. Merayo, T. Ott, H. Reme, J.G. Trotignon, J.E. Walhund, Mars Environment and Magnetic Orbiter model payload, *Experimental Astronomy*, 23, https://doi.org/10.1007/s10686-008-9101-1, 2009.

Books and Chapter in Books

· Luhr, H., M. Korte M., **M. MANDEA**, The recent Geomagnetic Field and its Variations, in Geomagnetic field variations, Springer (ed. Glassmeier, K.-H., Soffel, H., Negendank J.), ISBN 978-3-540-76938-5, pp. 25-64, 2009.
· **MANDEA, M.** and V. Lesur, The Magnetic Lithosphere: A Novel View in The Lithosphere: Geochemistry, Geology and Geophysics, Eds: J. E. Anderson and R. W. Coates, Nova Science Publishers, ISBN: 978-1- 60456-903-2, 2009.

Papers (Further journals)

· Yahiat, Y., M. Hamoudi, **M. MANDEA**, Les secousses magnetiques vues par les donnees scalaires satellitaires, *Bulletin of the National Geological Service*, Vol 20, no 1, 2009.

· **MANDEA, M.**, V. Papitashvili, Worldwide Geomagnetic Data Collection and Management, *EOS*, 90, 45, 409-424, https://doi.org/10.1029/2009EO450001, 2009.

· **MANDEA, M.**, N. Olsen, Geomagnetic and Archeomagnetic Jerks: Where Do We Stand?, *EOS*, Transactions, AGU, 90, 24, https://doi.org/10.1029/2009EO240004, 2009.

Proceedings and Reports

· Cianchini, G., A. De Santis, G. Balasis, **M. MANDEA**, E. Qamili, Entropy based analysis of satellite magnetic data for searching possible electromagnetic signatures due to big earthquakes, *Proceedings of the 3rd IASME/WSEAS International Conference on Geology and Seismology*, 29-35, 2009.

· Hemshorn, A., E. Pulz, **M. MANDEA**, GAUSS: Improvements to the Geomagnetic AUtomated SyStem 100- 103, Proceedings of the XIIIth IAGA Workshop on geomagnetic observatory instruments, data acquisition, and processing: *U.S. Geological Survey Open-File Report*, 2009.

· Kotze, P.B., **M. MANDEA**, M. Korte, Modelling Southern African Secular Variation Using 2005-2007 Field Survey Data, 127-132, Proceedings of the XIIIth IAGA Workshop on geomagnetic observatory instruments, data acquisition, and processing: *U.S. Geological Survey Open-File Report*, 2009.

· Linthe, H., **M. MANDEA**, M. Korte, Installing a Geomagnetic Observatory on St. Helena Island - a Special Challenge 133-145, Proceedings of the XIIIth IAGA Workshop on geomagnetic observatory instruments, data acquisition, and processing: *U.S. Geological Survey Open-File Report*, 2009.

2008

Papers (ISI journals)

· Langlais, B., F. Leblanc, T. Fouchet, S. Barabash, D. Breuer, E. Chassefiere, A. Coates, V. Dehant, F. Forget, H. Lammer, S. Lewis, M. Lopez-Valverde, **M. MANDEA**, M. Menvielle, A. Pais, M. Paetzold, P. Read, C. Sotin, P. Tarits, S. Vennerstrom, Mars Environment and Magnetic Orbiter: Science and Measurement Objectives, *Astrobiology*, https://doi.org/10.1089/AST.2007.022, 2008.

· Korte, M. and **MANDEA, M.**, Magnetic poles and dipole tilt variation over the past decades to millennia, *Earth Planets Space*, 60, 9, 937-948, https://doi.org/10.1186/BF03352849, 2008.

· Verbanac, G., Korte, M., **MANDEA, M.**, On minimizing the external field contributions in annual means of the European geomagnetic observatories, *GEOFIZIKA*, 25, 1, 27-39, 2008.

· Lesur V., I. Wardinski, M. Rother, **M. MANDEA**, GRIMM: the GFZ Reference Internal Magnetic Model based on vector satellite and observatory data, *Geophys. J. Int.*, 173, https://doi.org/10.1111/j.1365-246X.2008.03724.x, 2008.

· Wardinski, I., R. Holme, S. Asari, **M. MANDEA**, The 2003 geomagnetic jerk and its relation to the core surface flows, *Earth Planet. Sc. Letters*, 267, 468-481, https://doi.org/10.1016/j.epsl.2007.12.008, 2008.

· Olsen, N. and **M. MANDEA**, Rapidly changing flows in the Earth's core, *Nature Geosciences*, https://doi.org/10.1038/ngeo203, 2008.

Papers (further journals)

· **MANDEA, M.**, Variatii magnetice rapide la 3000km in adancul Terrei, Revista Stiinta si Tehnica, mai-august, 2008.

Proceedings and Reports

· **MANDEA, M.**, F. Hansen, V. Lesur, H. Luhr, P. Lundahl, S. MacMillan, N. Olsen, P. Ritter, C. Stolle, A. Thomsen, P. Visser, Preparation of the Swarm Level 2 Data Processing, *ESA Contract No. 20969/07/NL/JA, Final Report*, 476pp, 2008.

2007

Papers (ISI journals)

· Auster, H.U., **M. MANDEA**, A. Hemshorn, E. Pulz, M. Korte, Automation of absolute measurement of the geomagnetic field, *Earth Planets Space*, 59, 1007–1014, https://doi.org/10.1186/BF03352041, 2007.
· Wicht, J., **M. MANDEA**, F. Takahashi, U.R. Christensen, M. Matsushima, B. Langlais, The Origin of Mercury's Internal Magnetic Field, *Space Sci. Rev.*, https://doi.org/10.1007/s11214-007-9280-5, 2007.
· Mozzoni, D.T., **M. MANDEA**, J. Cain, Magnetic perturbations seen by CHAMP and evaluated using the TIE-GCM, *Ann. Geophys.*, 25, 1543-1554, https://doi.org/10.5194/angeo-25-1543-2007, 2007.
· Chambodut, A., C. Eymin, **M. MANDEA**, Geomagnetic jerks from the Earth's surface to the top of the core, *Earth Planets Space*, 59, 675-684, https://doi.org/10.1186/BF03352730, 2007.
· Verbanac, G., M. Korte, **M. MANDEA**, On long-term trends in European geomagnetic observatory biases, *Earth Planets Space*, 59 (7), 685-695, https://doi.org/10.1186/BF03352731, 2007.
· Hemant, K., E. Thebault, **M. MANDEA**, D. Ravat, S. Maus, Magnetic anomaly map of the world: merging airborne, marine and ground-based magnetic data sets, *Earth Planet. Sci. Letts*, https://doi.org/10.1016/j.epsl.2007.05.040, 2007.
· Verbanac, G., H. Luhr, M. Rother, M. Korte, **M. MANDEA**, Contributions of the external field to the observatory annual means and a proposal for their corrections, *Earth Planets Space*, 59, 251-257, https://doi.org/10.1186/BF03353102, 2007.
· Hamoudi, M., E. Thebault, V. Lesur, **M. MANDEA**, GeoForschungsZentrum Anomaly Magnetic Map (GAMMA): A candidate model for the World Digital Magnetic Anomaly Map, *Geochem. Geophys. Geosyst.*, 8, Q06023, https://doi.org/10.1029/2007GC001638, 2007.
· Balasis, G. and **M. MANDEA**, Can electromagnetic disturbances related to the recent great earthquakes be detected by satellite magnetometers?, *Tectonophysics*, 431, 173- 195, https://doi.org/10.1016/j.tecto.2006.05.038, 2007.
· Olsen, N. and **M. MANDEA**, Investigation of a secular variation impulse using satellite data: The 2003 geomagnetic jerk, *Earth Planet. Sci. Lett.*, 255, 94-105, https://doi.org/10.1016/j.epsl.2006.12.008, 2007.
· Kotze, P., **M. MANDEA**, M. Korte, Modelling the southern African geomagnetic field secular variation using ground survey data for 2005, *South African Journal of Geology*, 110, 2-3, 187-192, https://doi.org/10.2113/gssajg.110.2-3.187, 2007.
· Korte, M., **M. MANDEA**, P. Kotze, E. Nahayo, B. Pretorius, Improved observations at the southern African geomagnetic repeat station network, *South African Journal of Geology*, 110, 2-3, 175-186, https://doi.org/10.2113/gssajg.110.2-3.175, 2007.
· **MANDEA, M.**, M. Korte, D. Mozzoni, P. Kotze, The magnetic field changing over the southern African continent: a unique behaviour, *South African Journal of Geology*, 110, 2-3, 193-202, https://doi.org/10.2113/gssajg.110.2-3.193, 2007.

Books/Chapter in Books

· **MANDEA, M.** and E. Thebault, The Changing Faces of the Earth's Magnetic Field, Commission For The Geological Map Of The World, ISBN 978-2-9517181-9-7, 2007.
· **MANDEA, M.**, Main Field Modelling, *Encyclopaedia Of Geomagnetism And Paleomagnetism*, Eds D. Gubbins and E. Herrero-Bervera, 679-683, Springer, 2007.
· **MANDEA, M.**, Main field maps, *Encyclopaedia Of Geomagnetism And Paleomagnetism*, Eds D. Gubbins and E. Herrero-Bervera, 674-679, Springer, 2007.
· **MANDEA, M.**, Observatory programme in France, *Encyclopaedia Of Geomagnetism And Paleomagnetism*, Eds D. Gubbins and E. Herrero-Bervera, 721-722, Springer, 2007.

Papers (further journals)

· Jaumann, R., Spohn, T.,Hiesinger, H., Jessberger, E.K., Neukum, G., Oberst, J., Helbert, J., Christensen, U., Keller, H.U., Mall, U., Bohnhardt, H., Hartogh, P., Glassmeier, K.-H., Auster, H.-U., Moreira, A., Werner, M., Patzold, M., Palme, H., Wimmer-Schweingruber, R., **MANDEA, M.**, Flechtner, F., Lesur, V., Hausler, B., Srama, R., Kempf, S., Hordt, A., Eichentopf, K., Hauber, E., Hoffmann, H., Kohler, U., Kuhrt, E., Michaelis, H., Pauer, M., Sohl, F., Denk, T., van Gasselt, S, Lunar Exploration Orbiter (LEO): Providing a Globally Covered, Highly Resolved Integrated, Geological, Geochemical and Geophysical Data Base of the Moon, LEAG Workshop on Enabling Exploration, 2007.
· De Wit, M., B. Horsfield, L. Combrinck, J. Compton, A. Kounov, J. Tinker, M. Tredoux, T. Partridge, G. Uenzelmann-Neben, K. Gohl, W. Jokat, S. Neben, **M. MANDEA**, R. Di. Primio, O. Ritter, U. Weckmann, H. Oberhansli (2006). Inkaba yeAfrica project surveys sector of earth from core to space, *EOS*, 87(11), 113-117, 2007.
· **MANDEA, M.** and M. Korte, Ancient Sundials and Maps reveal historical geomagnetic declination values, *Eos Trans. AGU*, 88 (31), 310-311, https://doi.org/10.1029/2007EO310002, 2007.
· Olsen, N. and **M. MANDEA**, Will the magnetic north pole move to Siberia?, *Eos Trans. AGU*, 88(29), 293, https://doi.org/10.1029/2007EO290001, 2007.

Proceedings and Reports

· Linthe, H.J., P. Kotze, **M. MANDEA**, H. Theron, Keetmanshoop: A New Observatory in Namibia, *Publs. Inst. Geophys. Pol. Acad. Sc.,* C-99, 38-45, 2007.
· Auster, H.U., **M. MANDEA**, A. Hemshorn, M. Korte, E. Pulz, GAUSS: Geomagnetic Automated System, *Publs. Inst. Geophys. Pol. Acad. Sc.,* C-99, 49-59, 2007.
· Kotze, P., **M. MANDEA**, M. Korte, A New Geomagnetic Field Model for Southern Africa Based on 2005 Ground Survey Data, *Publs. Inst. Geophys. Pol. Acad. Sc.,* C-99, 201-208, 2007.
· Korte, K., **M. MANDEA**, N. Olsen, Worldwide Observatory Hourly Means from 1995 to 2003: Investigation of Their Quality, *Publs. Inst. Geophys. Pol. Acad. Sc.,* C-99, 275-283, 2007.
· Linthe, H.J., I. Cholakov, **M. MANDEA**, Panagjurishte Observatory Upgrade for INTERMAGNET, *Publs. Inst. Geophys. Pol. Acad. Sc.*, C-99, 284-290, 2007.
· Lesur, V., I. Wardinski, M. Rother, Y. Quesnel, **M. MANDEA**, Lithospheric componenet of GRIMM - the GFZ Reference Internal Magnetic Model, Geothechnologien Science report, 149-153, Munich, 2007.
· **MANDEA, M.**, V. Lesur, M. Rother, Y. Quesnel, M. Hamoudi, E. Thebault, World Digital Magnetic Anomaly Map, GAMMA - the GFZ contribution, Geothechnologien Science report, 154-158, Munich, 2007.
· Minchev, B., M. Holschneider, **M. MANDEA**, A. Chambodut, I. Patent, E. Scholl, Data compression for global field modelling, GeothechnologienScience report, 159-162, Munich, 2007.

· Jaumann, R., T. Spohn, K. Eichentopf, E. Hauber, J. Helbert, H. Hoffmann, U. Kohler, E. Kuhrt, H. Michaelis, J. Oberst, M. Pauer, F. Sohl, H. Hiesinger, E. K. Jessberger, G. Neukum, T. Denk, S. van Gasselt, U. Christensen, H.U. Keller, U. Mall, H. Bohnhardt, P. Hartogh, K.-H. Glassmeier, H.-U. Auster, A. Hordt, A. Moreira, M. Werner, M. Patzold, H. Palme, R. Wimmer-Schweingruber, **M. MANDEA**, V. Lesur, B. Hausler, Konzept eines Lunaren Explorations Orbiters (LEO), *Vorschlag fur eine Wissenschftliche Mondmission, DLR*, 109pp, 2007.
· Leblanc, F., B. Langlais, T. Fouchet, S. Barabash, D. Breuer, E. Chassefiere, A. Coates, V. Dehant, F. Forget, H. Lammer, S. Lewis, M. Lopez-Valverde, **M. MANDEA**, M. Menvielle, A. Pais, M. Paetzold, P. Read, C. Sotin, P. Tarits, S. Vennerstrom, Mars Environment and Magnetic Orbitor, *Answer to the First Planning Cycle of Cosmic Vision 2015-2025 - ESA*, 41pp, 2007.

Miscellaneous

· Korhonen, J., J.D. Fairhead, M. Hamoudi, K. Hemant, V. Lesur, **M. MANDEA**, S. Maus, M. Purucker, D. Ravat, T. Sazonova, E. Thebault, Magnetic Anomaly Map of the World (and associated DVD), Scale: 1:50,000,000, 1st edition, *Commission for the Geological Map of the World*, Paris, France, 2007.

2006

Papers (ISI journals)

· Balasis, G., I. A. Daglis, P. Kapiris, **M. MANDEA**, D. Vassiliadis, K. Eftaxias, From pre-storm activity to magnetic storms: a transition described in terms of fractal dynamics, *Annals of Geophysics*, 24, 3557-3567, https://doi.org/10.5194/angeo-24-3557-2006, 2006.
· **MANDEA, M.** and G. Balasis, The SGR 1806-20 magnetar signature on the Earth's magnetic field, *Geophys. J. Int.*, Vol. 167, No. 2, 586-591, https://doi.org/10.1111/j.1365-246X.2006.03125.x, 2006.
· **MANDEA, M.** and N. Olsen, A new approach to directly determine the secular variation from magnetic satellite observations, *Geophys. Res. Lett.*, 33, L15306, https://doi.org/10.1029/2006GL026616, 2006.
· Olsen, N., R. Haagmans, T.J. Sabaka, A. Kuvshinov, S. Maus, M.E. Purucker, M. Rother, V. Lesur, **M. MANDEA**, The Swarm End-to-End mission simulator study: A demonstration of separating the various contributions to Earth's magnetic field using synthetic data *Earth, Planet and Space*, Vol. 58, No. 4, 359- 370, https://doi.org/10.1186/BF03351934, 2006.
· Thebault, E., **M. MANDEA**, J.J. Schott, Modeling the lithospheric magnetic field over France by means of revised spherical cap harmonic analysis (R-SCHA) *J. Geophys. Res.*, Vol. 111, No. B5, B05102, https://doi.org/10.1029/2005JB004110, 2006.
· Wardinski, I. and **M. MANDEA**, Annual and semi-annual variations of the geomagnetic field components analysed by the multi-taper method, *Earth, Planets and Space*, Vol. 58 (4), 785-791, https://doi.org/10.1186/BF03351982, 2006.
· Olsen, N., H. Luhr, T. Sabaka, **M. MANDEA**, M. Rother, L. Toffner-Clausen, S. Choi, CHAOS - A Model of Earth's Magnetic Field derived from CHAMP, Orsted, and SAC-C magnetic satellite data, *Geophys. J. Int.*, Vol. 165, https://doi.org/10.1111/j.1365-246X.2006.03059.x, 2006.
· Thebault, E., J.J. Schott, **M. MANDEA**, Revised Spherical Cap Harmonic Analysis (R-SCHA): Validation and properties, *J. Geophys. Res.*, **111**, B01102, https://doi.org/10.1029/2005JB003836, 2006.

· **MANDEA, M.**, Magnetic satellite missions: where have we been and where are we going? *Comptes Rendus Geosciences*, Vol. 338, 1002-1011, https://doi.org/10.1016/j.crte.2006.05.011, 2006.

Proceedings and Reports

· Schachtschneider, R, G. Balasis, M. Rother, **M. MANDEA**, Wavelet-based selection of satellite data forgeomagnetic field modelling, Proceedings of *First SWARM International Science Meeting*, Nantes, 3-5 May, 2006.

· Thebault, E. and **M. MANDEA**, Contribution of regional modelling techniques to the SWARM mission, Proceedings of *First SWARM International Science Meeting*, Nantes, 3-5 May, 2006.

· Mozzoni, D. T., **M. MANDEA**, J. C. Cain, CHAMP: TIE - GCM magnetic perturbation comparisons, Proceedings of *First SWARM International Science Meeting*, Nantes, 3-5 May, 2006.

· **MANDEA, M.**, H. Luhr, V. Lesur, The recent geomagnetic field as seen by the magnetic satellites, *International Final Colloquium of the German Science Foundation Priority Programme 1097* 'Geomagnetic Field Variations: Space-Time Structure, Processes, and Effects on System Earth' (Braunschweig 2006), 56-66, 2006.

· Minchev, B., A. Chambodut, L. Amsel, **M. MANDEA**, M. Holschneider, Application of Local Multipole Wavelet Expansions in Geomagnetic Field Modelling, *GEOTECHNOLOGIEN, Observation of System Earth from Space*, Bonn, 46-50, 2006.

· Thebault, E., M. Hamoudi, M. Rother, V. Lesur, **M. MANDEA**, Improvement of the lithospheric magnetic anomaly field using satellite and airborne measurements, *GEOTECHNOLOGIEN, Observation of System Earth from Space*, Bonn, 60-64, 2006.

· **MANDEA, M.**, M. Korte, H. Luhr, Magnetic Field in Global Processes and Geomonitoring, *Programme 1, Geosystem: The Changing Earth,* 85-87, GFZ Potsdam, 2006.

· Handy, M. R., et al., including **M. MANDEA**, Coupled Earth Processes - From the past records to predictable change, *Freie Universität Berlin und Universität Potsdam*, 15, 2006.

· Horsfield, B. et al., including, **M. MANDEA** "Inkaba ye Africa" - dem dynamischen System Erde auf der Spur, *Zweijahresbericht GeoForschungsZentrum Potsdam 2004/2005*, 47-52, 2006.

· **MANDEA, M**, H. Luhr, M. Korte, G. Balasis, H.-J. Linthe, K. Hemant, E. Pulz, P. Ritter, M. Rother, C. Stolle, E. Thebault, I. Wardinski, A comprehensive view of the Earth's magnetic field from ground and space observations, *Zweijahresbericht GeoForschungsZentrum Potsdam 2004/2005*, 63-76, 2006.

2005

Papers (ISI journals)

· Dormy, E., and **M. MANDEA**, Tracking geomagnetic impulses down to the core-mantle boundary, *Earth and Planetary Science Letters*, 237, 300-309, https://doi.org/10.1016/j.epsl.2005.06.003, 2005.

· **MANDEA, M.**, Candidate models in producing the IGRF 9th generation, *Earth, Planets and Space*, 57 (12), 1183–1189, https://doi.org/10.1186/BF03351902, 2005.

· Chambodut, A., **M. MANDEA**, B. Langlais, Candidate main-field models for the Definitive Geomagnetic Reference Field 1995.0 and 2000.0, *Earth, Planets and Space*, 57 (12), 1197 1202, https://doi.org/10.1186/BF03351904, 2005.

· Chambodut, A., I. Panet, **M. MANDEA**, M. Diament, M. Holschneider, O. Jamet, Wavelet frames an alternative to spherical harmonic representation of potential fields, *Geophys. J. Int.*, 163, 875-899, https://doi.org/10.1111/j.1365-246X.2005.02754.x, 2005.

· **MANDEA, M.**, and M. Purucker, Measurements of the Earth's magnetic field from space, *Surveys in Geophysiscs*, 26, (No. 4), 415-459, https://doi.org/10.1007/s10712-005-3857-x, 2005.
· Chambodut, A., and **M. MANDEA**, Evidence for geomagnetic jerks in comprehensive models, *Earth, Planets and Space*, 57, 139-149, https://doi.org/10.1186/BF03352558, 2005.
Papers (Further journals)
· Atanasiu, L., D. Zugravescu, **M. MANDEA**, M. Roharik, Imagini ale componentelor campului geomagnetic din partea de Sud-Est a Europei, *Studii si Cercetari de Geofizica*, 43, 65-78, Bucuresti, 2005.
· Atanasiu, L., **M. MANDEA**, D. Zugravescu, M. Roharik, Trans-European suture zone over the Romanian territory in the light of new satellite data, *Revue Roumaine de Géophysique*, 49, 49-61, Bucuresti, 2005.
Proceedings and Reports
· Bitterly, M., A. Chuillat, D. Fouassier, J.-L. Le Mouel, **M. MANDEA**, J.-J. Schott, Analyse des series de donnees obtenues dans les observatoires du BCMT depuis leur creation, it Bureau Central de Magnetisme terrestre, No 22, 9-21, 2005.
· Korte, M., H.-J. Linthe, **M. MANDEA**, 75 Jahre erdmagnetische Messungen in Niemegk: das Adolf- Schmidt-Observatorium fur Geomagnetismus des GeoForschungsZentrum Potsdam, GeoForschungsZentrum Potsdam, 27, 2005.

2004

Papers (ISI journals)
· Thebault, E., J.-J. Schott, **M. MANDEA**, J.P. Hoffbeck, A new proposal for spherical cap harmonic modelling, *J. Geophys. Int.*, 159, 83-103, https://doi.org/10.1111/j.1365-246X.2004.02361.x, 2004.
· Chassefiere, E., A. Nagy, **M. MANDEA**, F. Primdahl, H. Remee, J.-A. Sauvaud, R. Lin, S. Barabash, D. Mitchell, T. Zurbuchen, F. Leblanc, J.-J. Berthelier, H. Waite, D. T. Young, J. Clarke, M. Parrot, J.-G. Trotignon, J.-L. Bertaux, E. Quemerais, F. Barlier, K. Szego, S. Szalai, S. Bougher, F. Forget, J. Lilensten, J.-P. Barriot, G. Chanteur, J. Luhmann, G. Hulot, M. Purucker, D. Breuer, S. Smrekar, B. Jakosky, M. Menvielle, S. Sasaki, M. Acuna, G. Keating, P. Touboul, J.-C. Gerard, P. Rochus, S. Orsini, G. Cerutti-Maori, J.Porteneuve, M. Meftah, Ch. Malique, DYNAMO: a Mars upper atmosphere package for investigating solar wind interaction and escape processes, and mapping Martian fields, *Advances in Space Research - includes Cospar Information Bulletin*, 33, 2228-2235, https://doi.org/10.1016/S0273-1177(03)00528-3, 2004.
· Langlais, B., M. Purucker, **M. MANDEA**, The crustal magnetic field of Mars, *J. Geophys. Res. - Planets*, Vol. 109, E02008, https://doi.org/10.1029/2003JE002048, 2004.
Books/Chapter in Books
· Maus, S., H. Luhr, G. Balasis, M. Rother, **M. MANDEA**, Introducing POMME, The Potsdam Magnetic Model of the Earth, *Second CHAMP mission*
Papers (further journals)
· **MANDEA, M.**, and P. Mayaud, Guillaume Le Nautonnier - un precurseur du magnetisme terrestre, *Revue d'Histoire des Sciences et de leur applications*, 57, 161-174, Paris, 2004.
results for gravity, magnetic and atmospheric studies, Springer, Berlin, 293-299, 2004.
Proceedings and Reports
· **MANDEA, M.**, Observing the Earth's magnetic field from space, Reports to COSPAR 2004, World Committee for Space Research, 35th Scientific Assembly - 18-25 July 2004, Centre National D'Etudes Spatiales, 112-113, Paris, 2004.

· **MANDEA, M.**, Mesures dans les stations magnetiques de repetition de la France metropolitaine et de la Corse - 2002, *Bureau Central de Magnétisme terrestre*, No 20, 5-50, 2004.
· **MANDEA, M.**, French results of the geomagnetic field repeat station network measurements -- 2002 *Bureau Central de Magnétisme terrestre*, No 20, 51-58, 2004.
· Friis-Christensen, E., A. De Santis, A. Jackson, G. Hulot, A. Kuvshinov, H. Luhr, **M. MANDEA**, S. Maus, N. Olsen, M. Purucker, M. Rothacher, T. Sabaka, A. Thomson, S. Vennerstrom, P. Visser, Swarm The Earth's Magnetic Field and Environment Explorers, 70 pp., ESA SP-1279(6), 2004.
· Olsen, N., E. Friis-Christensen, G. Hulot, M. Korte, A. Kuvshinov, V. Lesur, H. Luhr, S. Macmillan, **M. MANDEA**, S. Maus, M., Purucker, C. Reigber, P. Ritter, M. Rother, T. Sabaka, P. Tarits, A. Thomson, Swarm End-to-End mission performance simulator study, ESA Contract No. 17263/03/NL/CB, DSRI Final Reports, 190pp, 2004.

2003

Papers (ISI journals)

· Macmillan, S., S. Maus, T. Bondar, A. Chambodut, V. Golovkov, R. Holme, B. Langlais, V. Lesur, F. Lowes, H. Luhr, W. Mai, **M. MANDEA**, N. Olsen, M. Rother, T. Sabaka, A. Thomson, I. Wardinski, The 9th generation international geomagnetic reference field, *Geophys. J. Int.*, 155 (3), 1051-1056, https://doi.org/10.1111/j.1365-246X.2003.02102.x, 2003.
· Macmillan, S., S. Maus, T. Bondar, A. Chambodut, V. Golovkov, R. Holme, B. Langlais, V. Lesur, F. Lowes, H. Luhr, W. Mai, **M. MANDEA**, N. Olsen, M. Rother, T. Sabaka, A. Thomson, I. Wardinski, The 9th Generation International Geomagnetic Reference Field, International Association of Geomagnetism and Aeronomy (IAGA), Division V, Working Group 8, *Earth Planets Space*, 55, pp. i-ii, https://doi.org/10.1186/BF03351778, 2003.
· Jackson, A., A.R.T. Jonkers, **M. MANDEA**, A. Murray, Earth's magnetic field in the early 19th century from French sources, *Geochem. Geophys. Geosyst.*, Vol. 4, No. 7, 1054, https://doi.org/10.1029/2002GC000494, 2003.
· Bellanger, E., F. Anad, J.-L. Le Mouel, **M. MANDEA**, The irregular variations of the external geomagnetic field from INTERMAGNET data, *Earth Planets Space*, 55, 173-181, https://doi.org/10.1186/BF03351746, 2003.
· **MANDEA, M.**, and E. Dormy, Asymmetric behavior of magnetic dip poles, *Earth Planets Space*, 55, 153-157, https://doi.org/10.1186/BF03351742, 2003.
· Langlais, B., **M. MANDEA**, P. Ultre-Guerard, High-resolution magnetic field modeling: application to MAGSAT and Orsted data, *Phys. Earth Planet. Int.*, 135, 77-92, https://doi.org/10.1016/S0031-9201(02)00207-8, 2003.
· Holschneider, M., A. Chambodut, **M. MANDEA**, From global to regional analysis of the magnetic field on the sphere using wavelet frames, *Phys. Earth Planet. Int.*, 135, 107-124, https://doi.org/10.1016/S0031-9201(02)00210-8, 2003.

Papers (further journals)

· Macmillan, S., S. Maus, T. Bondar, A. Chambodut, V. Golovkov, R. Holme, B. Langlais, V. Lesur, F. Lowes, H. Luhr, W. Mai, **M. MANDEA**, N. Olsen, M. Rother, T. Sabaka, A. Thomson, I. Wardinski, Ninth generation international geomagnetic reference field released, *EOS Transactions AGU*, 84, 503, 2003.
· Korte, M., and **M. MANDEA**, Improvements Planned for European Geomagnetic Repeat Stations, *EOS, AGU*, Vol. 84, 17, 160, https://doi.org/10.1029/2003EO170006, 2003.

· **MANDEA, M.**, La connaissance du champ magnetique terrestre a l'epoque des satellites, *Revue NAVIGATION*, vol. 51, no.201, 31-41, Paris, 2003.

Books/Chapter in Books

· Chambodut, A., **M. MANDEA**, M. Holschneider, Modelling the Earth's magnetic field: Wavelet based and standard Methods, *First CHAMP mission results for gravity, magnetic and atmospheric studies*, 232-238, Springer, Berlin, 2003.

Proceedings and Reports

· Chave, A. D., J. W. Bailey, S. Beaulieu, R. Butler, F. K. Duennebier, J. H. Filloux, D. Harris, **M. MANDEA**, J. A. Orcutt, K. Smith, R. Stephen, P. Tarits, F. L. Vernon, F. B. Wooding, 2003-2004 upgrades and additions to the Hawaii-2 Observatory, Proceedings of *3rd International Workshop on Scientific Use of Submarine Cables and Related Technologies*, 14-18, 2003.

· Tarits, P., **M. MANDEA**, M. Calzas, C. Drezen, A. Dubreule, Seafloor geomagnetic observatory program in France, Proceedings of *3rd International Workshop on Scientific Use of Submarine Cables and Related Technologies*, 63-66, 2003.

· Menvielle, M., F. Primdahl, P. Brauer, P.A. Jensen, J.M.G. Merayo, J.-J. Berthelier, D. Breuer, G. Chanteur, **M. MANDEA**, W. Magnes, G. Musmann, K. Pajunpa, J.-L. Pincon, K. Schwingenschuh, L. Szarka, S. Vennerstrom, The NETLANDER MAGNETIC experiment, Proceedings of *4th Ørsted International Science Team Conference*, 301-304, Copenhagen, 2003.

· Purucker, M., J. Bloxham, C. Constable, H. Kim, S. Maus, **M. MANDEA**, N. Olsen, M. Rother, T. Sabaka, L. Toffner-Clausen, S. Vennerstrom, R. von Frese, Modeling of the Earth's magnetic field and its variations with Orsted, CHAMP and Orsted-2/SAC-C: current status and future prospects, Proceedings of *4th Ørsted International Science Team Conference*, 319-326, Copenhagen, 2003.

· Schwarte, J., A. Chambodut, H. Luhr, **M. MANDEA**, Parameterisation of external magnetic fields from CHAMP vector data, Proceedings of *4th Ørsted International Science Team Conference*, 135-138, Copenhagen, 2003.

· Chambodut, A., J. Schwarte, **M. MANDEA**, H. Luhr, The selection of data in main field models, Proceedings of *4th Ørsted International Science Team Conference*, 31-34, Copenhagen, 2003.

· **MANDEA, M.**, 60, 59, 58 ...How many minutes for a reliable hourly mean?, Proceedings of *IAGA Symposium*, 112-121, Hermanus, 2003.

· Kormendi, A., and **M. MANDEA**, The First Decade of INTERMAGNET Base-lines, Proceedings *IAGA Symposium*, 138-146, Hermanus, 2003.

· Hulot, G., and **M. MANDEA**, Observation, modelisation et interpretation du champ geomagnetique a l'ere spatiale, *rapport CNFGG*, 186-216, Ed. J.-P. Barriot, Toulouse, 2003.

2002

Papers (ISI journals)

· Chassefiere, E., J.-J. Berthelier, J.-L. Bertaux, E. Quemerais, J.-P. Pommereau, P. Rannou, F. Raulin, P. Coll, D. Coscia, A. Jambon, P. Sarda, J.C. Sabroux, G. Vitter, A. Le Pichon, B. Landeau, P. Lognonne, Y. Cohen, S. Vergniole, G. Hulot, **M. MANDEA**, J.-F. Pineau, B. Bezard, H. U. Keller, D. Titov, D. Breuer, K. Szego, Cs. Ferencz, M. Roos-Serote, O. Korablev, V. Linkin, R. Rodrigo, F.W. Taylor, A.-M. Harri, The Lavoisier mission: A system of descent probe and balloon flotilla for geochemical investigation of the deep atmosphere and surface of Venus, *Advances in Space Research*, Vol. 29, 255-264, https://doi.org/10.1016/S0273-1177(01)00576-2, 2002.

· **MANDEA, M.**, and B. Langlais, Observatory crustal magnetic biases during MAGSAT and Orsted satellite missions, *Geophys. Res. Lett.*, https://doi.org/10.1029/2001GL013693, 2002.
· Purucker, M. E., B. Langlais, N. Olsen, G. Hulot, **M. MANDEA**, The southern edge of cratonic North America: evidence from new satellite magnetometer observations, *Geophys. Res. Lett.*, https://doi.org/10.1029/2001GL013645, 2002.
· Bellanger, E., M. Blanter, J.-L. Le Mouel, **M. MANDEA**, M.G. Shnirman, On the geometry of the geomagnetic irregular variations, *J. Geophys. Res.*, 107, https://doi.org/10.1029/2001JA900112, 2002.
· Hulot, G., C. Eymin, B. Langlais, **M. MANDEA**, N. Olsen, Small-scale structure dynamics of the geodynamo inferred from Orsted and MAGSAT satellite data, *Nature*, 416, 620-623, https://doi.org/10.1038/416620a, 2002.

Papers (further journals)

· Newitt, L.R., **M. MANDEA**, L.A. McKee, J.J. Orgeval, Recent acceleration of the North Magnetic Pole linked to magnetic jerks, *EOS*, vol 83, 381-388, https://doi.org/10.1029/2002EO000276, 2002.
· Georgescu, P., J.-L. le Mouel, **M. MANDEA**, Electric and magnetic perturbations generated by D.C. electric railway, *St. Cerc. GEOFIZICA*, 40, 69-82, 2002.

Proceedings and Reports

· **MANDEA, M.**, F. Primdahl, M. H. Acuna, G. Chanteur, Y. Cohen, J. E. P. Connerney, E. Friis-Christensen, G. Hulot, B. Langlais, M. Menvielle, M. Purucker, N. Olsen, P. Tarits, K. Schwingenschuh, S. Vennerstrom, M. Wieczorek, MEMOIRE -- Magnetic Experiment on Mars Orbiting InstRumEnts, *CNES proposed mission for AO Premier 07*, 44pp., 2002.

2001

Papers (ISI journals)

· Bellanger, E., J.-L. Le Mouel, **M. MANDEA**, S. Labrosse, Chandler wobble and geomagnetic jerks. *Phys. Earth Planet. Int.*, 124, 95-103, https://doi.org/10.1016/S0031-9201(01)00188-1, 2001.

Papers (further journals)

· **MANDEA, M.**, S. Macmillan, T. Bondar, V. Golovkov, B. Langlais, F. Lowes, N. Olsen, J. Quinn, T. Sabaka, International Geomagnetic Reference Field 2000 *EOS*, 82 (32), 347, https://doi.org/10.1029/01EO00215, 2001.
· Neubert, T., **M. MANDEA**, G. Hulot, R von Frese, F. Primdahl, J. L. Jorgenson, E. Friis-Christensen, P. Stauning, N. Olsen, T. Risbo, Ørsted satellite captures high-precision geomagnetic field data, *EOS*, vol 82, 81-87, https://doi.org/10.1029/01EO00043, 2001.
· Purucker, M., B. Langlais, **M. MANDEA**, Interpretation of a Magnetic Map of the Valles Marineris region, Mars, *32nd Lunar and Planetary Science Conference*, Houston, Texas, 2001.

Proceedings and Reports

· **MANDEA, M.**, French magnetic observation and theory at the time of DE MAGNETE, *Contributions to Geophysics and Geodesy*, Slovak Academy of Science, 31, 1, 25-27, 2001
· **MANDEA, M.**, How well is the main-field secular variation known?, *Contributions to Geophysics and Geodesy, Slovak Academy of Science*, 31, 1, 233-243, 2001.
· Bitterly, J., M. Bitterly, **M. MANDEA**, Study of baseline values over long time period at Chambon la Foret observatory, *Contributions to Geophysics and Geodesy*, Slovak Academy of Science, 31, 1, 179-190, 2001.

· **MANDEA, M.**, S. Macmillan, T. Bondar, V. Golovkov, B. Langlais, F. Lowes, N. Olsen, J. Quinn, T. Sabaka, International Geomagnetic Reference Field 2000, *Contributions to Geophysics and Geodesy*, Slovak Academy of Science, 31, 1, 253-259, 2001.
· Tarits, P., and **M. MANDEA**, The need for seafloor geomagnetic observatories: the geomagnetic component of the French program OFM, *Proceedings of OHP/ION Joint Symposium -- Long-term observations in the Oceans*, 271-273, 2001.

2000

Papers (ISI journals)
· **MANDEA, M.**, E. Bellanger, J.-L. Le Mouel, A geomagnetic jerk for the end of 20th century? *Earth Planet. Sci. Lett.*, 183, 369-373, https://doi.org/10.1016/S0012-821X(00)00284-3, 2000.
· Lowes, F. J., T. Bondar, V.P. Golovkov, B. Langlais, S. Macmillan, **M. MANDEA**, Evaluation of the candidate Main Field model for IGRF 2000 derived from preliminary Orsted data, *Earth Planets Space*, 52, 1183-1186, https://doi.org/10.1186/BF03352350, 2000.
· **MANDEA, M.**, and B. Langlais, Use of Orsted scalar data in evaluating the pre-Orsted main field candidate models for the IGRF 2000, *Earth Planets Space*, 52, 1167-1170, https://doi.org/10.1186/BF03352347, 2000.
· Langlais, B., and **M. MANDEA**, An IGRF candidate main geomagnetic field model for epoch 2000 and a secular variation model for 2000-2005, *Earth Planets Space*, 52, 1137-1148, https://doi.org/10.1186/BF03352344, 2000.
· **MANDEA, M.**, and S. Macmillan, International Geomagnetic Reference Field – The Eighth Generation, *Earth Planets Space*, 52, 1119-1124, https://doi.org/10.1186/BF03352342, 2000.
· Menvielle, M., G. Musmann, F. Kuhnke, J.-J. Berthelier, K.-H. Glassmeier, **M. MANDEA**, U. Motschmann, K. Pajunpaa, J.-L. Pincon, F.Primdahl, L. Szarka, Contribution of magnetic measurements onboard NetLander to Mars exploration, *Planetary and Space Sciences*, 48, 12-14, 1231-1247, https://doi.org/10.1016/S0032-0633(00)00106-9, 2000.
· Olsen, N., R. Holme, G. Hulot, T. Sabaka, T. Neubert, L. Toeffner-Clausen, F. Primdahl, J. Joergensen, J.-M. Leger, D. Barraclough, J. Bloxham, J. Cain, C. Constable, V. Golovkov, A. Jackson, P. Kotze, B. Langlais, S. Macmillan, **M. MANDEA**, J. Merayo, L. Newitt, M. Purucker, T. Risbo, M. Stampe, A. Thomson, C. Voorhies, Orsted Initial Field Model (OIFM), *Geophys. Res. Lett.*, 27, 22, 3607-3610, https://doi.org/10.1029/2000GL011930, 2000.
· **MANDEA, M.**, S. Macmillan, S. Bondar, V. Golovkov, B. Langlais, F. Lowes, N. Olsen, J. Quinn, T. Sabaka, International Geomagnetic Reference Field 2000. *PAGEOPH*, 157, 1797-1802, https://doi.org/10.1007/PL00001062, 2000.
· **MANDEA, M.**, S. Macmillan, S. Bondar, V. Golovkov, B. Langlais, F. Lowes, Olsen N., Quinn J., T. Sabaka, International Geomagnetic Reference Field 2000. *Geophys. J. Int.*, 141, 259-262, https://doi.org/10.1046/j.1365-246x.2000.00121.x, 2000.
· **MANDEA, M.**, S. Macmillan, S. Bondar, V. Golovkov, B. Langlais, F. Lowes, N. Olsen, J. Quinn, T. Sabaka, International Geomagnetic Reference Field - 2000, *Phys. Earth Planet. Int.*, 120, 39-42, https://doi.org/10.1016/S0031-9201(00)00153-9, 2000.
· Le Huy, M., **M. MANDEA**, J.-L. Le Mouel, A. Pais, Reply to A. Jackson's "Comment on 'Time evolution of the fluid flow at the top of the core. Geomagnetic jerks", *Earth Planets Space*, 52, 651-653, https://doi.org/10.1186/BF03351675, 2000.

· Le Huy, M., **M. MANDEA**, J.-L. Le Mouel, A. Pais, Time evolution of the fluid flow at the top of the core. Geomagnetic jerks. *Earth Planets Space*, 52, 163-173, https://doi.org/10.1186/BF03351625, 2000.

Papers (further journals)

· **MANDEA, M.**, Observations magnetiques de la terre, *XYZ -- Association Française de Topographie*, No 82, 24-27, 2000.

Books/Chapter in Books

· **MANDEA, M.**, French magnetic observation and the theory at the time of DE MAGNETE, *Geomagnetism. Research past and present, IAGA, Ed. W. Schröder*, 73-80, Bremen-Roennebeck, 2000.

· Ultre-Guerard, P., and **M. MANDEA**, Declination and longitude in France in the early 17th Century, *Geomagnetism. Research past and present, IAGA, Ed. W. Schröder,* 81-92, Bremen-Roennebeck, 2000.

1999

Papers (ISI journals)

· **MANDEA ALEXANDRESCU, M.**, D. Gibert, J.-L. Le Mouel, G. Hulot, G. Saracco, An estimate of average lower mantle conductivity by wavelet analysis of geomagnetic jerks, *J. Geophys. Res*., vol 104, 17735-17745, https://doi.org/10.1029/1999JB900135, 1999.

· Hongre, L., P. Sailhac, **M. ALEXANDRESCU**, J. Dubois, Nonlinear and multifractal approaches of the geomagnetic field, *Phys. Earth Planet. Int.*, 110, 157-190, https://doi.org/10.1016/S0031-9201(98)00133-2, 1999.

Papers (further journals)

· **MANDEA ALEXANDRESCU, M.**, S. Gilder, V. Courtillot, J.-L. Le Mouel, D. Gilbert, Looking back on a half century of repeat magnetic measurements in France, *Eos AGU*, 80, 25-26, 1999.

· Gibert, D., and **M. MANDEA ALEXANDRESCU**, Soubresauts geomagnetiques, *La Recherche*, No 325, 28-30, 1999.

Proceedings and Reports

· Langlais, B., P. Ultre-Guerard, C. Vernin, **M. MANDEA**, Y. Cohen, G. Hulot, Orsted: IPGP commissioning of the OVH magnetometer, CNES, OERS-RP 0000-0031-IPG, 28 pp., 1999.

· Gilbert, D., **M. MANDEA ALEXANDRESCU**, G. Petiau, Main results of the Vth workshop on geomagnetic observatory instruments, data acquisition and processing, *Bureau Central de Magnétisme Terrestre*, No 12, 55-78, 1999.

· **MANDEA ALEXANDRESCU, M.**, and J. Bitterly, French results of the geomagnetic field repeat station networks measurements, *Bureau Central de Magnétisme Terrestre*, No 12, 43-54, 1999.

· **MANDEA ALEXANDRESCU, M.**, Mesures dans les stations magnetiques de repetition de la France - 1997, *Bureau Central de Magnétisme Terrestre*, No 12, 7-29, 1999.

· Bitterly, J., **M. MANDEA ALEXANDRESCU**, J.-J. Schott, J. Vassal, Contribution de la France a l'observation cu champ magnetique terrestre, *CNFGG, Rapport quadriennal 1995-1998*, 145-158, Ed. J.-P. Barriot, Toulouse, 1999.

1998

Papers (ISI journals)

· Le Huy, M., **M. ALEXANDRESCU**, G. Hulot, J.-L. Le Mouel, On the characteristics of successive geomagnetic jerks, *Earth, Planets, Space*, 50, 723-732, https://doi.org/10.1186/BF03352165, 1998.

· Ultre-Guerard, P., D. Jault, **M. ALEXANDRESCU**, J. Achache, Improving geomagnetic field models for the period 1980-1999 using Orsted data, *Earth, Planets, Space*, 50, 635-640, https://doi.org/10.1186/BF03352158, 1998.

· Soare, A., G. Cucu, **M. MANDEA ALEXANDRESCU**, Historical geomagnetic measurements in Romania, *Annali di Geofisica*, 41 (4), 539-554, https://doi.org/10.4401/ag-3799, 1998.

Papers (further journals)

· **ALEXANDRESCU, M**, Database of Geomagnetic Observatory Monthly Means Seeks Contributors, *Eos AGU*, **79**, 345, 1998.

· **ALEXANDRESCU, M**, Comment et pourquoi observer le champ magnetique terrestre, *"Lettre semestrielle" diffusée par la SGF*, tome 169, 6, 24-33, 1998.

1997

Papers (ISI journals)

· Courtillot, V., G. Hulot, **M. ALEXANDRESCU**, J.-L. Le Mouel, J. Kirschvink, Sensitivity and evolution of sea-turtle magnetoreception: observations, modelling and constraints from geomagnetic secular variation, *Terra Nova*, 9, 203-207, https://doi.org/10.1111/j.1365-3121.1997.tb00013.x, 1997.

· **ALEXANDRESCU, M**, V. Courtillot, and J.-L. Le Mouel, High-resolution secular variation of the geomagnetic field in Western Europe over the last 4 centuries: Comparison and integration of historical data from Paris and London, *J. Geophys. Res*., 102, 20245-20258, https://doi.org/10.1029/97JB01423, 1997.

· Cohen, Y., **M. ALEXANDRESCU**, G. Hulot, J.-L. Le Mouel, Candidate models for the 1995 revision of IGRF, a worldwide evaluation based on observatory monthly means, *J. Geomag. Geoelectr.,* 49, 279-290, https://doi.org/10.5636/jgg.49.279, 1997.

1996

Papers (ISI journals)

· **ALEXANDRESCU, M**, V. Courtillot, J.-L. Le Mouel, Geomagnetic field direction in Paris since the mid-XVIth century, *Phys. Earth Planet. Int.,* 98, 321-360, https://doi.org/10.1016/S0031-9201(96)03194-9, 1996.

· **ALEXANDRESCU, M**, D. Gibert, G. Hulot, J.-L. Le Mouel, G. Saracco, Worldwide analysis of geomagnetic jerks, *J.Geophys. Res*., 101, 21975-21994, https://doi.org/10.1029/96JB01648, 1996.

Papers (further journals)

· **ALEXANDRESCU, M**, and Hulot G., "Voir" le noyau, dans *Pour la Science*, juillet, 1996.

Proceedings and Reports

· **ALEXANDRESCU, M**, Geomagnetic observatories and field modelling, *Proceedings of the VIth workshop on Geomagnetic observatories, instruments, data acquisition and processing*, Ed. Institut Royal Meteorologique de Belgique, Bruxelles, 236-241, 1996.

1995

Papers (ISI journals)

· **ALEXANDRESCU, M**, D. Gibert, G. Hulot, J.-L. Le Mouel, G. Saracco, Detection of geomagnetic jerks using wavelet analysis, *J. Geophys. Res*., 100, 12557-12572, https://doi.org/10.1029/95JB00314, 1995.

1994

Papers (ISI journals)

· **ALEXANDRESCU, M**, C. Ha Duyen, J.-L. Le Mouel, Geographical distribution of magnetic observatories and field modelling, *J. Geomag. Geoelectr.,* 46, 891-901, https://doi.org/10.5636/JGG.46.891, 1994.

1993

Papers (further journals)

· Alexandrescu, D., and **M. ALEXANDRESCU**, L'influence des bruits industriels produits par l'activite miniere sur les resultats de la prospection magnetometrique, *Romanian Journal of Geophysics*, vol.16, 1-8, 1993.

· Soare, A., **M. ALEXANDRESCU**, D. Alexandrescu, The international adoption of the Dreptu geomagnetic station (Poiana Teiului, Neamt district), *Romanian Journal of Geophysics*, vol.16, 77-82, 1993:

1989

Papers (further journals)

· Soare, A., G. Cucu, **M. ALEXANDRESCU**, Information about deep structure on a profile across the Eastern Carpathians using geomagnetic welling, *Rev., Roum. Géol., Géophys. et Géogr., Géophysique*, 33, 49-56, 1989.

4) LIST OF SUPERVISED PhD and POSTDOCs

PhD thesis - Director or co-director

•2022 - : Charlotte Gauge, "Etude des redistributions de masse à l'interface noyau-manteau par gravimétrie spatiale", Institut de Physique du Globe Paris (France) / GRECEFUL project
•2020 – 2024 : Ilya Firsov, "Geomagnetic view on the flow and radial shear at the top of the Earth's core", University of Grenoble (France) / GRECEFUL project
•2020 - 2023: Hugo Lecomte, "Magnetic, geodetic and gravimetric constrains on the core dynamics", University of Strasbourg (France) / GRECEFUL project
•2014 - 2018: Joao Domingos, "South Atlantic Anomaly" (University of Coimbra (Portugal) / University of Grenoble (France))
•2009 - 2013: Anca Isac, "Exploring the magnetism of impact craters on Earth, Mars and moon" (Romanian Academy, Bucarest, Romania)
•2006 - 2011: Reyko Schachtschneider, "Error distribution in regional inversions of potential fields from satellite data" (Universitat Potsdam, Germany)
•2006 - 2010: Anne Geese, "Earth′s Magnetic Field: Observation and Modelling From Global to Regional Scales" (Institut fur Geophysik und Extraterrestrische Physik - TU Braunschweig, Germany)
•2005 - 2008: Yasmina Yahiat, "Apport des données scalaires satellitaies à l'études des secousses géomagnétiqes" (Université des Sciences et de la Technologie Houari Boumediene, Alger, Algeria)
•2005 - 2007: David Mozonni, "The Changing Geomagnetic Field from the Ionosphere to the Core-Mantle Boundary" (Florida University, US)
•2005 - 2006: Giuliana Verbanac, "On the modeling of the regional magnetic field" (Zagreb University, Croatia)
•2001 - 2004: Aude Chambodut, "Modèlisation du champ magnétique principal grâce aux données satellitaires" (IPG Paris, France)
•2000-2003: Erwan Thebault, "Modélisation du champ magnétique terrestre à l'échelle régionale" (EOST Strasbourg, France)
•1998 - 2001: Benoit Langlais, "Les champs magnétiques de la Terre et de Mars: apport des satellites Ørsted et Mars Global Surveyor" (IPG Paris, France)

CNES responsable - Post-doctoral research grants

•2024-2025: Olivier Barrois, "Geomagnetism and numerical models: insights on the Earth's outer core" (IPGP, Paris, France) / GRACEFUL project
•2022-2024: Felix Gerick, "Inter-annual waves in Earth's core" (CNES, Toulouse, France) / GRACEFUL project
•2022-2024: Hannah Frances Rogers, "Modelling the Earth's magnetic field at the Core-Mantle Boundary", (ISTERRE Grenoble, France) / GRACEFUL project
•2022-2024: Kang Wei Lim, "Core-Mantle Boundary Processes", (ISTERRE Grenoble, France) / GRACEFUL project
•2022-2024: Paolo Personnettaz, "Core-Mantle Boundary Processes", (ISTERRE Grenoble, France) / GRACEFUL project
•2022-2023: Anita Thea Saraswati, "Extracting the common signal of the deep interior from the magnetic and gravity fields " (LIENSS, University La Rochelle, France) / GRACEFUL project
•2020-2022: Thobias Schwaiger , "Rapid changes of the main geomagnetic field" (ISTERRE Grenoble, France) / GRACEFUL project

•2021-2023: Benedetta Dini, "Sentinel-1 and Sentinel-2 multi-temporal analyses for the detection of landslide precursory signs: a step towards landslide early warning systems" (ISTERRE Grenoble, France)
•2021-2022: Damien Delforge , "Analyse causale de la dynamique des variations globales des masses mesurée par gravimétrie spatiale (GRACE)" (LIENSS, University La Rochelle, France)
•2020-2022: Katy Burrows, "Characterising the temporal evolution of rainfall-triggered landslides using radar and optical satellite data" (GET Toulouse, France)
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•2016-2018: Cedric Twardzik, "Investigating the transition from co-to post--seismic slip using high rate GNSS position time series" (GEOAZUR Nice, France)
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•2015-2017: Maxime Mouyen, "Quantification des flux sédimentaires par gravimétrie spatiale" (Geoscience Rennes, France)
•2014-2016: Gregory Dufrechou, "Apport de données géophysiques récentes et des observations spatiales (mission GOCE) à l'étude de la structure de la lithosphère continentale : application aux Pyrénées et au SO de l'Europe" (GET Toulouse, France)
•2014-2016: Cecilia Cadio, "Structure et dynamique de la lithosphère dans les orogènes continentales à partir de la gravimétrie spatiale et sol" (Geosciences Montpellier, France)

•2013-2015: Julia Pfeffer, "Variations récentes du niveau marin et des mouvements verticaux de la croûte en milieu côtier: apport des observations géodésiques terrestres et spatiales" (LGL-TPE Lyon, France)
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CNES responsable - PhD grants

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•2018-2022 Laetitia Lemrabet, "Déformations actuelles en bordure est du plateau Tibétain : suivi du fonctionnement des failles et mécanismes de déformation contraints par interférométrie radar haute- résolution (données Sentinel-1)" (ISTERRE Grenoble, France)
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•2012-2015: Diana Saturnino, "Développement d'une nouvelle technique d'analyse pour identifier les varaitions spatiales et temporelles du champ géomagnétique dans les mesures de la mission Swarm" (LPG Nantes, France)
•2012-2015: Amaury Dehecq, "Bilan de masse des glaciers Himalayens par l'étude de données satellitaire, aéroportées et de terrain" (LISTIC, France)
•2012-2015: Leye Papa-Ousmane, "AVLF DEMETER: Sondages VLF par satellite" (LGO Brest, France)