

Laboratoire de Planétologie et Géodynamique
(LPG)
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Research and teaching positions

March 2019 - Now	MSCA-IF Post doctoral fellow , Université de Nantes, Laboratoire de Planétologie et Géodynamique .
	Dec. 2019 - June 2020: maternity and parental leave
Sept. 2018 - Feb. 2019	Post doctoral researcher , Université de Nantes, Laboratoire de Planétologie et Géodynamique . Funded by the project Geoplanet.
Apr. 2017 - Aug. 2018	ELSI (Earth Life Science Institute) Research scientist . ELSI, Tokyo Institute of Technology. Tokyo, Japan.
	Febr. - March 2018: invited researcher at ANU, Australia.
	May - June 2018: invited researcher at Université de Nantes, LPG.
Apr. 2015 - March 2017	JSPS Post-doctoral Fellow FY2015 Host researcher: Pr. Kei Hirose. 2 years, including a research grant (~17k EUR). ELSI, Tokyo Institute of Technology, Tokyo, Japan.
Sept. 2011 - Dec. 2014	Teaching assistant (doctorant moniteur) at Departement des Sciences de la Terre, Ecole Normale Supérieure de Lyon
	Jan. 2014 - Apr. 2014: maternity leave

Education

2014	Ph.D.: Dynamics and evolution of the Earth's inner core at Laboratoire de Géologie de Lyon, École Normale Supérieure de Lyon, France, under the supervision of Stéphane Labrosse. <i>Ph.D. Defense: 4th december 2014.</i> (First class honors)
2010	M.S. in Physics (Magna Cum Laude) ENS de Lyon, France.
2008	B.S. in Earth and Planetary Sciences (Magna Cum Laude) ENS de Lyon, France.

Publications

- **Peer review publications:**

L. Noack & **M. Lasbleis**. *Parameterisations of interior properties of rocky planets. An investigation of planets with Earth-like compositions but variable iron content*, Astronomy and Astrophysics, 2020 (accepted on April 2020).

M. Lasbleis, M. Kervazo, G. Choblet. *The fate of liquids trapped during the Earth's inner core growth*, Geophysical Research Letters, 2020, 47, e2019GL085654.

M. Lasbleis, L. Waszek, E. Day. *GrowYourIC: a step towards a coherent model of seismic structure*, Geochemistry, Geophysics, Geosystems, 2017, 18 (11), 4016-4026.

M. Lasbleis, R. Deguen, S. Labrosse, P. Cardin. *Earth's inner core dynamics induced by the Lorentz force*. Geophysical Journal International, 2015, 202 (1), 548-563.

M. Lasbleis, R. Deguen. *Building a regim diagram for the Earth's inner core*. Physics of the Earth and Planetary Interiors, 2015, 247, 80-93.

Z. M. Geballe, **M. Lasbleis**, V. F. Cormier and E. A. Day. *Sharp hemisphere boundaries in a translating inner core*, Geophysical Research Letter, 2013, 40, 1719-1723

J. Noir, M. A. Calkins, **M. Lasbleis** and J. M. Aurnou. *Experimental study of librational driven zonal flows in a straight cylinder*, Physics of the Earth and Planetary Interiors, 2010, 182, 98-106.

- **Non-peer review publications:**

R. Deguen, **M. Lasbleis**. *Fluid Dynamics of Earth's Core: Geodynamo, Inner Core Dynamics, Core Formation* In: Le Bars M., Lecoanet D. (eds) *Fluid Mechanics of Planets and Stars*. CISM International Centre for Mechanical Sciences (Courses and Lectures), vol 595. Springer, Cham, 2020.

E. Tasker, J. Tan, K. Heng, S. Kane, D. Spiegel, R. Brasser, A. Casey, S. Desch, C. Dorn, J. Hernlund, C. Houser, M. Laneuville, **M. Lasbleis**, A.-S. Libert, L. Noack, C. Unterborn & J. Wicks. *The language of exoplanet ranking metrics needs to change*. *Nature Astronomy*, 2017, 1 (2), 0042.

- **Softwares (Python packages)**

M. Lasbleis, 2019, MarineLasbleis/mushdynamics: v0.1.0. Zenodo. doi:10.5281/zenodo.3541859

M. Lasbleis, 2017, MarineLasbleis/GrowYourIC 0.5. Zenodo. doi:10.5281/zenodo.3497530.

Conferences and workshops

Invited talks at international conferences and workshops

- ★ **M. Lasbleis**, *Combining seismic observations and geodynamical models for exploring the Earth's inner core*, SEDI (Study of the Earth Deep Interior) meeting, July 2018 (Edmonton, Canada)
- ★ **M. Lasbleis**, *Inner core dynamics: combining seismic studies and geodynamical models*, Gordon Research Conference on the Earth Interior (South Hadley, MA, USA), May 2017.
- ★ **M. Lasbleis**, *Freezing and melting at the inner core boundary*, Workshop on the Earth's mantle and core (Matsuyama, Japan) November 2015.
- ★ **M. Lasbleis**, R. Deguen, S. Labrosse, P. Cardin, *Dynamics induced by the Lorentz force in the growing inner core*, Workshop on transport properties in the Earth's core (Kawaguchiko, Japan), November 2013.
- ★ **M. Lasbleis**, R. Deguen, S. Labrosse, P. Cardin, *Dynamics induced by the Lorentz force in the growing inner core* Inner core anisotropy workshop (Grenoble, France), November 2013.

Contributed talks at international conferences and workshops:

- ★ **M. Lasbleis**, M. Kervazo, *Compaction during the evolution of planetary inner cores*, EPSC-DPS Meeting (Geneva, Switzerland), Sep. 2019.
- ★ **M. Lasbleis**, R. Deguen, Q. Forquenot, *Topography at the inner core boundary*, AGU Fall Meeting (New Orleans, USA), December 2017.
- ★ **M. Lasbleis**, *Deep Earth from a laptop*, European Research Day (Tokyo, Japan), November 2016.
- ★ **M. Lasbleis**, J. Hernlund, S. Labrosse, *Snow Model for the F-Layer*, AGU (American Geophysical Union) Fall Meeting (San Francisco, CA, USA), December 2015.
- ★ **M. Lasbleis**, S. Labrosse, J. Hernlund, *Feedbacks Between Inner Core Freezing, Melting, and Evolution of the F-Layer*, AGU (American Geophysical Union) Fall Meeting (San Francisco, CA, USA), December 2011.

And more than 20 contributions as presenter of a poster in an international conference.

Invited seminars:

- UMET, Université de Lille (May 2019)
- IMPMC, Sorbonne Université (January 2019)
- Research School of Earth Sciences, Australian National University (February 2018)
- Laboratoire de Planétologie de Nantes, France (March 2015, May 2016).
- Institut des Sciences de la Terre, Grenoble, France (March 2015, April 2016).
- Institut de Recherches en Astrophysique et Planétologie, Toulouse, France (April 2016).

Fundings/scholarships/awards

- 2019 Member of the ISSI (International Space Science Institute) International Working Group *Non-Equilibrium Iron Snow*
- 2018 Marie Skłodowska-Curie actions (MSCA) Individual Fellowship (185k EUR for 2 years, starting March 2019)
- 2018 Grant-in-Aid for Scientific Research (Kakenhi – young researcher) ~ 17k EUR for 2 years (PI)
- 2018 Short Term Stay Mission COST Action TD 1308 ORIGINS, 900 EUR.
- 2017 Earth-Life Science Institute Incentive Award.
- 2016 Earth-Life Science Institute Director’s fund ~ 7k EUR.(PI)
- 2015 Grant-in-Aid for Scientific Research (Kakenhi – JSPS postdoctoral fellow). ~ 17k EUR for 2 years.
- 2015 Earth-Life Science Institute Director’s fund ~ 6k EUR. (PI)
- 2015 Japan Society for the Promotion of Science Post Doctoral Fellowship (2 years). ~ 70kEUR
- 2012 CIDER funding for research group. 5k EUR. (co-I)
- 2011 École Normale Supérieure de Lyon grant for student research groups. 4.5k EUR. (PI)
- 2007 Scholarship: full study and living allowance grant for graduate studies at École Normale Supérieure de Lyon: ~ 60k EUR.

Teaching experience and teaching administration

2019 **5-hour tutorial on numerical modeling in Dynamique des Intérieurs Planétaires**, M1 STU Université de Nantes.

2018 **13-hour tutorial on numerical modeling** for the 2nd GeoPlaNet Thematic School Fluid-Rock Interactions in the Solar System 12th-16th November 2018, Nantes (France).

2018 **Co-organization of the 2018 ELSI/EON Winter School for graduate and post doctoral students (34 students, from 4 different continents)**, with responsibilities for the curriculum and technical organisation of the lectures: initiation to UNIX and Python, planetary atmospheres, exoplanets, mantle convection. Lectures on initiation to UNIX and Python.

2015 **Highschool class** Chiba, Japan. 3 hours on Introduction to the Earth’s core.

2011 - 2014 **Teaching assistant** at the Department of Earth Science, École Normale Supérieure (ENS) de Lyon, France. Total: 190 hours over 3 years. In bold are the lectures I was responsible for in term of curriculum and organisation.

B.S. 2nd y.	Introduction to geophysics	Spring 2012	20hours (tutorials)
B.S. 3rd y.	Computer Science for geosciences	Fall 2012, 2013	2x20h (lectures+tut.)
	Mathematics	Fall 2011, 2012, 2013	3x20h (lectures+tut.)
	Thermodynamics of natural systems	Fall 2011, 2012, 2013	3x14h (tutorials)
	Geophysics (elasticity and magnetism)	Spring 2012, 2013	2x25h (tutorials)
	Mentoring	Fall 2012, 2013	2x20h
M.S. 1st y.	Geophysics (heat budget of planets)	Fall 2012, 2013	2x6h (tutorials)

Mentoring activities

- 2019 **Marine Gelin**, undergrad (Licence 3) student internship, Inner core dynamics with CIG-ASPECT.
- 2018 **Irene Bonati**, graduate student at ELSI (principal advisor: John Hernlund). Project: magnetic fields of exoplanets.
- 2017 **Mathilde Kervazo**, graduate (Master 1 and M2) student internship (3 months and 1 month) at ELSI: Inner core dynamics with CIG-ASPECT and inner core compaction. Research presented at AGU 2018, EPSC 2019 and accepted for publication in GRL.
- 2017 **Quiterie Forquenot**, graduate (Master 2) student internship (5 months) at ELSI: Inner core topography. Research presented at the Crust-to-core workshop (Japan)
- 2016 **Maude Geissmann**, graduate (Master 1) student internship, at ELSI, co-advised with John Hernlund. Research presented at the SEDI meeting 2016.
- 2013 **Christie Juan**, undergrad (Licence 3) student internship (1 month).

Scientific Outreach

- 2019 Hands-on experiments at the *Fete de la Science* 2019.
- 2017 Talk at Nerd Nite Tokyo, October 20.
- 2017 Talk at the ELSIOrigins1, September 2017. Public outreach event at ELSI.
- 2016 Talk on "Research and life in Japan", at the Orientation for JSPS Post Doctoral Fellows.
- 2016 Organisation of the "Earth-Life Science Institute Youchien", classes held at the institute. Lecture on "fluid dynamics for deep Earth".
- 2016 ELSI's Ask me Anything: open discussion with the public at the Tokyo Tech Institute of Technology.
- 2012 - 2014 Participation to the annual science fair *Fête de la Science* (4 days, responsible for the organisation and presentation of an activity for the 4 days), ENS de Lyon.
- 2011 - 2013 Creation and management of a student group: First approach of planetary fluid dynamics ENS de Lyon. . Budget: 4.5k euros for two years.

Community service and other services

- 2019 Primary convener of AGU 2019 Fall Meeting session DI13A-DI14A.
- 2019 Co-convener of Goldschmidt 2019 session Beyond Earth and Earth-like: The Compositional Diversity and Evolution of Exoplanets
- 2018 Primary convener of AGU 2018 Fall Meeting session DI14.
- 2018 - now Contact information between ELSI and the LPG for the consortium GeoPlanet.
- 2018 Co-organizer of the Earth Life Science Winter School, at ELSI, Jan-Feb 2018.
- 2017 - now Community ambassador for EarthArXiv (an open source community governed preprint system for the Earth sciences)
- 2017 Organizer of the Power Hour during Gordon Research Conference Interior of the Earth (South Hadley, MA, USA)
- 2017 - 2018 Member and co-founder of the Gender Equality Team at ELSI.
- 2016 - 2017 Member of the Scientific Organizing Committee for the 5th ELSI International Symposium (11-13 January 2017)
- 2016 - 2017 Organizer of the Young Researchers' Day during the 5th ELSI Symposium (10 January 2017. ~ 60 grad students and post docs).
- 2016 Convener of AGU 2016 Fall meeting SEDI session.
- 2014 - now Outstanding student paper award judge, AGU fall meeting.
- 2012 - 2014 Grad student representative at the Laboratoire de Géologie de Lyon board of directors.
- 2011 Organization of the graduate student Day 2011: short scientific conferences held by the grad students, Laboratoire de Géologie de Lyon. Budget: 2.5k euros.
- 2008 - 2011 Organization of multidisciplinary scientific conferences (*Cédric Villani, Thomas Peacock, Eric Brun, Louis Schweitzer, etc.*) Budget: 2k euros per year.
- 2008 - 2010 Student representative at the Board of Directors of the ENS de Lyon.

Peer-review for: *Icarus*, *Progress in Earth and Planetary Science*, *Nature Advances*.

Academic membership: American Geophysical Union (2011 – today), European Geophysical Union (2017 – today), EANA (2018 – today), Europlanet (2019 – today)