PD Dr. Florian Lhuillier
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PERSONAL DATA

Date of birth: 08.12.1985 — Place of birth: Clichy (France)
Nationality: French — Marital status: married

EDUCATIONAL BACKGROUND

10.2019: accreditation to supervise research at LMU (Munich, Germany)
06.2011: doctorate in geophysics (*summa cum laude*) at IPGP (Paris, France)
06.2008: master's degree in geophysics (*summa cum laude*) at IPGP (Paris, France)
06.2006: bachelor's degree in physics (*magna cum laude*) at University of Orléans (France)

PROFESSIONAL BACKGROUND

since 09.2014: senior researcher (Akademischer Rat) at LMU (Munich, Germany)
01.2012 – 08.2014: postdoctoral researcher (Humboldt-Stipendiater) at LMU (Munich, Germany)
10.2008 – 12.2011: doctoral research assistant at IPGP (Paris, France)
junior lecturer at University Paris-Cité (Paris, France)

PROFESSIONAL RESPONSIBILITIES

teaching (5 hr/week)
Geo- and palaeomagnetism (BSc + MSc)
Data analysis in geo- and palaeomagnetism (MSc)
Scientific methods (MSc)

administration
Head of the geomagnetic observatory in Fürstenfeldbruck
Head of the selection committee of the master's programme of geophysics
Speaker of the palaeomagnetism group of the German Geophysical Society

STUDENTS' SUPERVISION

BSc D. Kittlaus (2014), T. Schwaiger (2015)
A. C. Manarcescu (2023), M. N. Putri (2024)

MSc J. Pincini (2015), F. Burmann (2015),
T. Schwaiger (2017), S. Hahn (2017),
Y. Chi (2021), T. Burkhard (2021), L. Krüger (2021)

PhD B. Eid (2023), Y. Chi (ongoing), A. Sahroni (ongoing)

Postdoc S. Hahn (ongoing)

RESEARCH GRANTS

- German Science Foundation (DFG)—Grant 521315821: "Behaviour and characterisation of the geodynamo at the end of the Cretaceous Normal Superchron" (2024–2026, 379 k€)
- German Science Foundation (DFG)—Grant 517539177: "Palaeomagnetism of tertiary volcanic rocks from Germany" (2023–2025, 322 k€)
- Sino-German Center for Research Promotion (CDZ)—Grant 1681: "Geomagnetic field behaviour during the Cretaceous Normal Superchron" (2021–2024, 410 kRMB)
- German Science Foundation (DFG)—Grant 405632737: "Behaviour of the Earth's magnetic field during the superchrons: comparative study of the Cretaceous lava flows from the Okhotsk-Chukotka volcanic belt (NE Siberia) and the Neoproterozoic sediments from the Yenisey Ridge (SW Siberia)" (2019–2022, 290 k€).
- German Science Foundation (DFG)—Grant 272370511: "Investigating the variability of the Earth's magnetic field during the past 30 Myr: a case study at low latitude (Ethiopia)" (2015–2019, 258 k€)
- Humboldt postdoctoral fellowship—"Do multiple geodynamo regimes exist? Exploration from numerical simulations, observatory and palaeomagnetic data." (2012–2014, 85 k€)

PUBLICATIONS

Chi, Y., **Lhuillier, F.**, Meng, J., Zhang, C., & Shcherbakov, V. P. (2025). Geomagnetic Dipole Strength During the Cretaceous Normal Superchron Recorded by Baked Sediments From Hainan (SE Asia). *Geophysical Research Letters, 52*(17), e2025GL116894. 10.1029/2025gl116894

Sleptsova, I. V., Gilder, S. A., Le Goff, M., Dellefant, F., Trepmann, C. A., **Lhuillier**, F., & Webb, S. J. (2025). Origin of the intensely negative magnetic anomalies in Witwatersrand strata, Vredefort impact structure, South Africa. *Geophysical Journal International, 243*(1), ggaf305. 10.1093/gji/ggaf305

Lhuillier, F., Lebedev, I. E., Tikhomirov, P. L., & Pavlov, V. E. (2025). Is the Geodynamo Characterized by a Distinct Geomagnetic Secular Variation Regime During the Cretaceous Normal Superchron? *Journal of Geophysical Research: Solid Earth, 130*(4), e2024JB030928. 10.1029/2024jb030928

Chi, Y., & **Lhuillier, F.** (2025). Paleomagnetic Secular Variation of Early Middle Miocene Volcanics From Vogelsberg (Germany). *Journal of Geophysical Research: Solid Earth, 130*(4), e2024JB031007. 10.1029/2024JB031007

Shcherbakov, V. P., **Lhuillier, F.**, Gribov, S. K., Tselmovich, V. A., & Aphinogenova, N. A. (2024). Potential Bias in Volcanic Paleomagnetic Records Due To Superimposed Chemical Remanent Magnetization. *Geophysical Research Letters, 51*(12), e2024GL109630. 10.1029/2024gl109630

Lhuillier, F., Lebedev, I. E., Tikhomirov, P. L., & Pavlov, V. E. (2024). High-Latitude Geomagnetic Secular Variation at the End of the Cretaceous Normal Superchron Recorded by Volcanic Flows From the Okhotsk-Chukotka Volcanic Belt. *Journal of Geophysical Research: Solid Earth, 129*, e2023JB027550. 10.1029/2023jb027550

Lhuillier, F., Shcherbakov, V. P., & Sycheva, N. K. (2023). Detecting dipolarity of the geomagnetic field in the paleomagnetic record. *Proceedings of the National academy of Sciences of the United States of America, 120*(25), e2220887120. 10.1073/pnas.2220887120

Lebedev, I. E., Bobrovnikova, E. M., Tikhomirov, P. L., Eid, B., **Lhuillier, F.**, & Pavlov, V. E. (2022). Amplitude of Secular Geomagnetic Variation in Late Cretaceous Based on Paleomagnetic Studies of the Okhotsk–Chukotka Volcanic Belt from Upper Reaches of Malyi Anyui River, West Chukotka. *Izvestiya, Physics of the Solid Earth, 58*(2), 185-202. 10.1134/S1069351322020045

Eid, B., **Lhuillier, F.**, Shcherbakov, V. P., & Shcherbakova, V. V. (2022). Do changes in geomagnetic secular variation, dipole moment and polarity reversal frequency correlate over the past 155 Myr? *Geophysical Journal International, 230*(2), 1132-1146. 10.1093/gji/ggac112

Bobrovnikova, E. M., **Lhuillier, F.**, Shcherbakov, V. P., Shcherbakova, V. V., Zhidkov, G. V., Lebedev, I. E., et al. (2022). High-latitude Paleointensities during the Cretaceous Normal Superchron from the Okhotsk-Chukotka Volcanic Belt. *Journal of Geophysical Research: Solid Earth, 127*, e2021JB023551. 10.1029/2021jb023551

Tikhomirov, P. L., Lebedev, I. E., Pasenko, A. M., **Lhuillier, F.**, Alekseev, D. V., & Pavlov, V. E. (2021). The "Upper Basalts" of the East Chukotka Segment of Okhotsk–Chukotka Belt: the Along Strike Migration of Volcanic Activity or the Overprint by Later Magmatic Event? *Doklady Earth Sciences, 501*, 1038–1042. 10.1134/S1028334X21120151

Tikhomirov, P. L., Lebedev, I. E., **Lhuillier, F.**, & Pavlov, V. E. (2021). Stratigraphy of the Okhotsk-Chukotka Belt in the Headwaters of the Malyi Anyui River (the vicinity of Kupol deposit): U-Pb and $^{40}Ar/^{39}Ar$ Age Data. *Doklady Earth Sciences, 501*(2), 1059–1064. 10.1134/S1028334X2112014X

Shcherbakov, V. P., **Lhuillier, F.**, & Sycheva, N. K. (2021). Exact analytical solutions for kinetic equations describing thermochemical remanence acquisition for single-domain grains: Implications for absolute paleointensity determinations. *Journal of Geophysical Research: Solid Earth, 126*, e2020JB021536. 10.1029/2020jb021536

Lebedev, I. E., Tikhomirov, P. L., Pasenko, A. M., Eid, B., **Lhuillier, F.**, & Pavlov, V. E. (2021). New Paleomagnetic Data on Late Cretaceous Chukotka Volcanics: the Chukotka Block Probably Underwent Displacements Relative to the North American and Eurasian Plates after the Formation of the Okhotsk-Chukotka Volcanic Belt? *Izvestiya, Physics of the Solid Earth, 57*(2), 232-246. 10.1134/S1069351321020014

Hervé, G., Chauvin, A., Lanos, P., **Lhuillier, F.**, Boulud-Gazo, S., Denti, M., & Macario, R. (2021). How did the dipole axis vary during the first millennium BCE? New data from West Europe and analysis of the directional global database. *Physics of the Earth and Planetary Interiors, 315*, 106712. 10.1016/j.pepi.2021.106712

Eid, B., **Lhuillier, F.**, Gilder, S. A., Pfänder, J. A., Gebru, E. F., & Aßbichler, D. (2021). Exceptionally High Emplacement Rate of the Afar Mantle Plume Head. *Geophysical Research Letters, 48*(23), e2021GL094755. 10.1029/2021gl094755

Meng, J., **Lhuillier, F.**, Wang, C., Liu, H., Eid, B., & Li, Y. (2020). Paleomagnetism of Paleocene-Maastrichtian (60–70 Ma) Lava Flows From Tian Shan (Central Asia): Directional Analysis and Paleointensities. *Journal of Geophysical Research: Solid Earth, 125*, e2019JB018631. 10.1029/2019JB018631

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Shcherbakov, V. P., Gribov, S. K., **Lhuillier, F.**, Aphinogenova, N. A., & Tsel'movich, V. A. (2019). On the Reliability of Absolute Palaeointensity Determinations on Basaltic Rocks Bearing a Thermochemical Remanence. *Journal of Geophysical Research: Solid Earth, 117*(3), 7616-7632. 10.1029/2019JB017873

Lhuillier, F., Shcherbakov, V. P., Shcherbakova, V. V., Ostner, S., Hervé, G., & Petersen, N. (2019). Palaeointensities of Oligocene and Miocene volcanic sections from Ethiopia: field behaviour during the Cainozoic. *Geophysical Journal International, 216*, 1482-1494. 10.1093/gji/ggy491

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Lhuillier, F. (2019). *The secular variation of the Earth's magnetic field: investigations from palaeomagnetic data and dynamo simulations.* (Habilitation Thesis), Ludwig-Maximilians-Universität, Munich, Germany.

Gilder, S. A., & **Lhuillier, F.** (2019). Can Paleomagnetism Distinguish Dynamo Regimes? In M. Mandea, M. Korte, A. Yau, & E. Petrovsky (Eds.), *Geomagnetism, Aeronomy and Space Weather: A journey from the Earth's Core to the Sun* (pp. 48-53).

Lhuillier, F., Shcherbakov, V. P., Gilder, S. A., & Hagstrum, J. T. (2017). Variability of the 0–3 Ma palaeomagnetic field observed from the Boring Volcanic Field of the Pacific Northwest. *Geophysical Journal International, 211*, 69-79. 10.1093/gji/ggx288

Khokhlov, A., **Lhuillier, F.**, & Shcherbakov, V. P. (2017). Intermittence and peculiarities of a statistic characteristic of the geomagnetic field in geodynamo models. *Izvestiya, Physics of the Solid Earth, 53*(5), 695-701. 10.1134/S106935131705007X

Lhuillier, F., Gilder, S. A., Wack, M., He, K., Petersen, N., Singer, B. S., et al. (2016). More stable yet bimodal geodynamo during the Cretaceous superchron? *Geophysical Research Letters, 43*(12), 6170-6177. 10.1002/2016GL069303

Lhuillier, F., Hulot, G., & Gallet, Y. (2013). Statistical properties of reversals and chrons in numerical dynamos and implications for the geodynamo. *Physics of the Earth and Planetary Interiors, 220*, 19-36. 10.1016/j.pepi.2013.04.005

Lhuillier, F., & Gilder, S. A. (2013). Quantifying paleosecular variation: Insights from numerical dynamo simulations. *Earth and Planetary Science Letters, 382*, 87-97. 10.1016/j.epsl.2013.08.048

Lhuillier, F., Fournier, A., Hulot, G., & Aubert, J. (2011). The geomagnetic secular-variation timescale in observations and numerical dynamo models. *Geophysical Research Letters, 38*(9), L09306. 10.1029/2011GL047356

Lhuillier, F., Aubert, J., & Hulot, G. (2011). Earth's dynamo limit of predictability controlled by magnetic dissipation. *Geophysical Journal International, 186*(2), 492-508. 10.1111/j.1365-246X.2011.05081.x

Lhuillier, F. (2011). *Variabilité et prédictibilité de la dynamo terrestre.* (Doctoral Thesis), Institut de Physique du Globe de Paris, Paris, France.

Hulot, G., **Lhuillier, F.**, & Aubert, J. (2010). Earth's dynamo limit of predictability. *Geophysical Research Letters, 37*(6), L06305. 10.1029/2009GL041869

Fournier, A., Hulot, G., Jault, D., Kuang, W., Tangborn, A., Gillet, N., et al. (2010). An Introduction to Data Assimilation and Predictability in Geomagnetism. *Space Science Reviews, 155*, 247-291. 10.1007/s11214-010-9669-4

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