Sylvie Demouchy

Born August 12, 1977, French citizen
Directrice de Recherche au CNRS
Laboratoire Magmas et Volcans
Université Clermont Auvergne
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Education

2014	French habilitation to direct research (**H.D.R.**), Montpellier University, France. « Olivine and its crystalline defects as fundamental parameters of Earth's dynamics ».
2004	**Dr. rer. nat** in Nature Wissenschaften **(Ph.D., thèse)** *magna cum laude* at the Bayerisches Geoinstitut, Bayreuth University, Germany « Water in the Earth's Interior: Thermodynamics and kinetics of hydrogen incorporation in olivine and wadsleyite ».
2000	**Master 2** (DEA) Dynamic of the lithosphere, *cum laude* at ISTERRE institute, Grenoble University, France « Étude pétrographique et géochimique des komatiites volcanoclastiques et diamantifère de Guyane Française ». Master 1, Earth Science, *magna cum laude* Aix-Marseille University, France
1999 1998	Bachelor (DEUG+Licence), Earth Science, *cum laude* Aix-Marseille University, France

Research Experience

2022-to present	**CNRS Senior Researcher** / Directrice de recherche CNRS (**DR2)** at Laboratoire Magmas & Volcans, in the Experimental Petrology research group.
2020-2022	**CNRS Senior Researcher** / Directrice de recherche CNRS – **DR2** at Géosciences Montpellier, in the Mantle-Interfaces research group.
2007-2020	**CNRS Junior Researcher** / Chargée de recherche CNRS - **CN** at Géosciences Montpellier, in the Mantle-Interfaces research group.
Sept 2007	**Post-doctoral fellow** at Department of Geology and Geophysics at the University of Minnesota, Minneapolis (funding by NASA to D.L. Kohlstedt).
2004-2007	**Post-doctoral fellow** of the Lunar and Planetary Institute, visiting the Department of Geology and Geophysics at the University of Minnesota, Minneapolis (funding by NSF and USRA-LPI to S. Mackwell).

Honors & Awards

- 2025 Prix Mid-Career SFMC Merit Award 2025 (https://sfmc-fr.org/?p=3734&lang=fr)
- 2020 Elected fellow of the Mineralogical Society of America
- 2017 CNRS honor for excellence in science ("Prime d'excellence scientifique")
- **2016 EMU Research Excellence Medal** (http://eurominunion.org/?page_id=928)
- 2011 CNRS honor for excellence in science ("Prime d'excellence scientifique")

Main scientific achievements and associated publications

Experimental quantification of hydrogen diffusion coefficients in olivine lattice and application, for the first time, to magma ascent rates estimates (Demouchy and Mackwell, *Phys. Chem. Min.* 2003, 2006 ; Demouchy et al., *Geology*, 2006) and in olivine grain boundaries (Demouchy, *Earth Planet Sci. Lett.*, 2010).

Effect of high temperature and high pressure on the hydrogen storage capacity of wadsleyite and application to the deep water cycle (Demouchy et al., 2005, *Am. Min.*).

Effect of hydrogen on transport properties in mantle minerals: hydrogen enhancement of Fe-Mg diffusion in magnesio-wüstite (Demouchy et al., *Contrib. Min. Petrol.* 2007) ; negligible hydrogen strength weakening in olivine (Demouchy et al., *Phys. Earth. Planet. Int.* 2012).

Experimentally-based flow law of olivine applicable to the Earth's lithosphere. (Demouchy et al., *Geophys. Res. Lett.* 2009, *Phys. Earth. Planet. Int.* 2013, *Tectonophysics*, 2014).

Building the database on hydrogen storage in mantle-derived rocks (e.g., invited review article Demouchy and Bolfan-Casanova, *Lithos*, 2016).

Collaborations to decipher plastic mechanisms of olivine at nanoscale (Mussi et al., *Phys. Chem. Min* 2014, *Phil. Mag.* 2015, 2017) and in particular identification for the first time of rotational defects in natural and experimentally deformed olivine polycrystals (Cordier, Demouchy et al., *Nature*, 2014) as well as thin amorphous layer of olivine (Samae et al., *Nature*, 2021).

Scientific Expertise & Lab Skills

Experimental mineralogy and petrology,
Defects in minerals, ionic diffusion and viscoelastoplastic deformation.
Concentration, distribution, and mobility of H in nominally anhydrous minerals

High-pressure and high-temperature research: Paterson apparatus, piston-cylinder, TZM cold seal-vessel, multi-anvil press, high temperature gas mixing furnace.
Fourier-transform infrared spectroscopy (data acquisition & treatment and apparatus maintenance)
Scanning electron microscopy (data acquisition & treatment)
Electron backscatter diffraction (data acquisition & treatment)
Electron probe microanalyses (end user)

2025 Campus-France Franco-Australien **PHC-FASIC** (PI – 3 000 €) **MandOline:** Magma & olivine, the origin of ductile deformation in cumulate olivines. Travel Grant for A. Dujardin.

2025 **LMV** (PI – 6 560 €) **Quanti-Melt**: Quantifying the contribution of intergranular melt in natural peridotites.

2025 **ClerVolc** (PI – 10 000 €) **InMelt:** The overlooked intergranular melt in natural peridotites.

2025-2026 **CNRS INSU** Action Tellus (PI – 15 500 €) **MandOline:** Magma and olivine: the origin of ductile deformation in cumulate olivines.

2024 INSU-**RéGEF** (PI – 4 400 €) **CODEX**: InterCalibration Of hyDrogEn measurements in orthopyroXenes and clinopyroxenes from the Earth upper most mantle (**CODEX**).

2023 **ClerVolc** (PI – 10 000€) **MOA:** Moa Island and mantle melting triggers.

2022 **ARC Discovery Projects** (DP2022): Mapping mineral systems of deep Australia. (PI: P. Rey, Co-PI: V. Chatzaras, S. O'Reilly, O. Alard, H. Yuan, K. Selway, S. Demouchy, M. Haynes). Funded 490 000 AUSD.

2021-2025 **ANR PCR H-DEEP-ISO**: Earth's deep water cycle and the messages from isotopes (PI: N. Bolfan-Casanova, Co-PI: B. Moine, B. Reynard, and S. Demouchy: Local PI for Geosciences Montpellier, 32 480 €).

2021-2022 **CNRS INSU** Action Tellus (PI – 13 450 €) **DOMINO:** Deformation and mineral defects in olivine: Impact on upper mantle ductility.

2020 CNRS **INSU Action PNP** (PI – 4 000 €) **KODIMIN**: Kinetics of Dehydration in Earth's Transition Zone Minerals.

2019 CNRS **INSU Action CT2 TELLUS** (PI – 7 000 €) **HYTREL**: Hydrogen and trace elements in mantle minerals.

2015-2019 **H2020 MSCA-ITN-2015-ETN CREEP** (PI: A. Tommasi GM) Role of complex rheologies of Earth materials in geodynamic processes, I was a participant, supervising 1 PhD student ESR1 on « Rheology of the lithospheric mantle ». http://www.itn-creep.eu

2014-2021 **ANR Defi-10 INDIGO** (PI: P. Burnard CRPG, total 398 000€) Incorporation and diffusion of noble gases in grain Boundary. Local PI for Geosciences Montpellier (107 000 €), co-PI on 2 tasks, co-PhD supervisor, and post-doc supervisor.

2014 CNRS **INSU Action SYSTER** (PI – 5 200 €) **ROLithos**: Rhéologie de l'olivine lithosphérique.

2013 CNRS **INSU Action SYSTER** (PI – 6 000 €) **Diff-Hy**: Apport de l'étude de la diffusion de l'hydrogène dans les xénolites de Eifel sur les processus de dégazage du manteau lithosphérique et sur la remonté magmatique.

2012-2015 **ANR JCJC** (PI: N. Bolfan-Casanova LMV - 180 000 €) **HyDeep**: Hydrogen Cycle within the Deep Earth. Co-PI on 2 tasks.

2011 **CNRS INSU** Action incitative PNP (Co-PI with O. Alard, 7 000 €) **HyTrack**: Hydrogen tracking in the uppermost mantle.

2009-2012 **MARIE-CURIE Fellowship IRG**, International Re-integration Grant (100 000 €): **PoEM**: Plasticity of Earth's Mantle.

2008 **CNRS INSU action incitative SEDIT** (PI – 5 000 €) **DIS-Hy**: Distribution et mobilité de l'hydrogène dans le manteau terrestre.

Teaching

University Clermont Auvergne, Montpellier University & Other European Universities

2023 - First LMV International High-Pressure Short-Course (4h)
2023 - Licence 3 - "Physics of Minerals " – Thermodynamics (21h)
2022 to 2024 Master 1S2 - "Croissance cristalline " (3h)
2021 - Master 1S2 - "Mécanique et rhéologie des roches " (7h)
2019 - 2-5 April – Guest Lecturer - Diffusion of H in the short-course "Diffusion in the Earth Sciences: Theory and Applications (Short Course) ». https://www.cuso.ch/onepage/?p=5770&uid=4512
Univ. Lausanne, CH. (3h)
2013, 2014, 2015 & 2017 - Bachelor S1 "Discovery of the deep Earth mineralogy" (2h)
2014 - 2015 - Master 1S2 - "Petrology, mineralogy and geochemistry of the mantle "(6h)
2013 - 2014 - Master 1 - "Petrology, mineralogy and geochemistry of the mantle" (6h)
- Master 2 - "Numerical modélisation of ionic diffusion "(15h)
2012 - 2013 - "Experimentation in petrophysics, geochemistry and mineralogy, advantages and limits" (*in charge* + 10 h of teaching)
2011 - 2012 - Master 1 - "Petrology, mineralogy and geochemistry of the mantle "(15h)
- Master 1 - "Numerical modélisation of ionic diffusion "(15h)
- Master 2 - "Experimentation in petrophysics, geochemistry and mineralogy, advantages and limits (18h)
- Member of the Master 1 jury (evaluation of master first year theses and talks)
2010 - 2011 - Master 2 - "Water in the mantle, consequences to rheology" (2h)
2009 - 2010 - Bachelor S2 -"Point defects in minerals" (1.5h)
- Master 2 on "water in the mantle, consequences to rheology" (2h)

Minnesota University

March 2007 - Lecture for PhD students on "Interdiffusion in minerals" (1h).
March 2006 - Lecture for PhD students on "hydrogen point defects in Forsterite" (2h).
Spring 2005 - Guest lecture, at the University of Minnesota. Topic: "Water in Earth's mantle: To comprehend if the Earth's mantle might be arid, damp, wet, saturated… or dehydrating" (20h).
March 2005 - Lecture on "hydrogen point defect in olivine" (2h).

Supervision

Post-Doc (1)

Julien Gasc (INDIGO project, 2015-2016) supervision (100 %). Targeting dislocations and disclinations in deformed iron-free nanoforsterite.

PhD students (6+1)

Adrianna Dujardin (2024-expected 2027), co-supervision (50%), with Emmanuel Gardés (LMV) and Olivier Alard (ANU).
Wendi Liu (2018-2021), Zhejiang Univ. - Chinese Fellowship, co-supervision (30%) with Prof. Q-K. Xia.
Manuel Thieme (2015-2018), ITN CREEP, co-supervision (80%) with David Mainprice.
Rémi Delon (2014-2017) CRPG, ANR INDIGO, co-supervision (50%) with P. Burnard & Y. Marrocchi.
Carole Denis (2012-2015) co-supervision (50%) with Olivier Alard.
Virginie Baptiste (2011-2014), co-supervision (50%) with Andrea Tommasi.
Vincent Soustelle (2007-2010), co-supervision (30%) with Andrea Tommasi. *Vincent Soustelle was awarded the "Prix Van Straelen » for PhD from the French Geological Society in 2011.*

Master students

M2 Adrianna Dujardin (2024) co-supervisor (50 %) with Emmanuel Gardés et Olivier Alard (ANU) Petro-physico-chemical characterization of nodule beds from the Kaupulehu lava flow, Hualalai volcano, Hawaii.

M2 Carole Denis (2012) co-supervisor 100%. Concentration and distribution of hydrogen in mantle xenoliths from Eifel volcanic fields: Implication for magma ascent rates.

M2 Jennifer Chaufaud (2011) co-supervisor (50%) with Olivier Alard. Geochemistry and water contents of xenoliths from Borée (Central Massif). Infrared spectroscopy (50%).

M2 Virginie Batiste (2011) co-supervisor (50%) with Andrea Tommasi. Texture and water contents of South African xenoliths. Infrared spectroscopy and modeling (25%).

M2 Julien Baticle (2009) co-supervisor (30%) with Alain Vauchez. Texture and water contents of Ethiopian xenoliths. Infrared spectroscopy (25%).

M2 Violaine Vignon (2008) co-supervisor (30%) with Benoit Gibert and Alain Vauchez. Experimentation on static recrystallization of dunite.

2011-2015, 6 x M1 students/year. Modélisation of diffusion processes using Matlab (100%).

Bachelor students (2)

Tatiana Houdin-Decombe & Guillemette Raoux (2009-2010): co-supervisor with Olivier Alard (50 %), "Water content of continental lithospheric mantle".

Hiring committees

2025, Université d'Orléans. Prof. position.
2025, Université Clermont Auvergne, Prof. position.
2021, Université d'Orléans. Prof. position.
2020, Université de Nantes. Maitre de conférences position.
2016, Université de Lille. Maitre de conférences position.
2010, Université de Montpellier Maitre de conférences position.
2012-2016 - CoNRS section 18. Chargé de recherche et directeur de recherche CNRS (junior and senior CNRS researchers) positions.

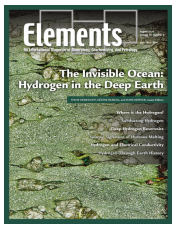
Student Evaluation

2025 Member of the Master 2 jury – Lab. Magmas & Volcans, UCA.
2010 & 2015 Member of the Master 2 jury – Geosciences Montpellier - Univ. Montpellier.

2024, PhD, Marialine CHARDELIN, Géosciences Montpellier, Univ. Montpellier (rapporteuse).
2024, PhD, Adrien GAUTIER, LMV, Univ. Clermont Auvergne (présidente du jury).
2022, PhD, Konstantinos THOMAIDIS, UMET, Univ. Lille (rapporteuse).
2021, PhD, Estelle LEDOUX, UMET, Univ. Lille (rapporteuse).
2021, PhD, Danny COULTARD, Univ. New Zealand, Massey (NZ) (external reviewer).
2021, PhD, Alexandra DEMERS, Univ. Lausanne (CH) (rapporteuse).
2020, PhD, Jean FURSTOSS, Univ. Côte-D'Azur (rapporteuse).
2019, PhD, Loïs MARTINEK, Univ. Clermont-Ferrand (rapporteuse).
2016, PhD, Xiaoyan GU, Univ. Lorraine, CRPG (rapporteuse).
2016, PhD, Leila HASHIM, Univ. Orléans, ISTO (examinatrice).
2015, PhD, Mike JOLLANDS, Univ. Canberra, Australia (external reviewer).
2012, PhD, Anaïs FEROT, Univ. Clermont-Ferrand (examinatrice).
2011, PhD, Karine BEGAUDEAU, Univ. La Rochelle (examinatrice).

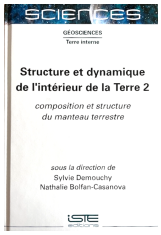
Scientific mobility

2025 – **France,** 2 weeks Geosciences Montpellier Project H-deep-ISO to S. Demouchy/C. Thoraval.
2024 – **France,** 1 week Geosciences Montpellier Project H-deep-ISO to S. Demouchy/C. Thoraval.
2024 – **Germany**, 1 week for X-ray diffraction at the Bayerisches Geoinstitut, University Bayreuth. Project H-deep-ISO to N.Bolfan/S. Demouchy/T. Boffa-Ballaran.
2024 – **France,** 1 week EBSD analyses at Geosciences Montpellier (F.Barou).
2024 – **Australia**, 3 weeks at GEMOC/CCFS, Macquarie University, Sydney, and RESE at ANU, Canberra. (collab. O. Alard).
2022 – **France,** 2 weeks for AEI-INSU-2022 and EBSD analyses at Geosciences Montpellier (Nicolas Le Moigne et Andréa Tommasi).
2020 – **France,** 5 weeks for high pressure research at LVM, Clermont-Ferrand, (collab. M.A. Bouhifd, N. Bolfan-Casanova, G. Manthilake and W. Liu).
2019 – **India**, 2 weeks, Indian Institut of Technology, Kharagpur, West Bengal, (collab. Dr. S. Ghosh and J. Pattnaik). Hydrogen in mantle-derived mineral from Dharwar Craton.1 invited department seminar.
2019 – **France**, 4 months for high pressure research at LVM, Clermont-Ferrand, (collab. M.A. Bouhifd, N. Bolfan-Casanova, G. Manthilake).
2018 – **Australia**, 2 weeks at GEMOC/CCFS, Macquarie University, Sydney. (collab. O. Alard).
2018 – **France**, 1 week, high pressure research at LVM, Clermont-Ferrand, (collab. M.A. Bouhifd).
2017 – **China**, 2.5 weeks, 2 Seminars at Zhejiang University (Hangzhou), invited by the Chinese Academy of Science and Prof. Q.K. Xia. 1 Seminar at Chinese University for Geosciences (Wuhan), invited by Prof. J. Zhang.
2015 – **Germany**, 3 weeks, high pressure research at the Bayerisches Geoinstitut, University Bayreuth. DFG Core facilities Grant.
2015 – **France**, 1 week high pressure research at LVM, Clermont-Ferrand, (collab. N. Bolfan-Casanova).
2014 – **France**, 1 week high pressure research at LVM, Clermont-Ferrand, (collab. N. Bolfan-Casanova).
2013 – **France**, 1 week high pressure research at LVM, Clermont-Ferrand, (collab. N. Bolfan-Casanova).
2012 – **Japan**, 3 weeks, Tokyo, Japan. EGIDE Hubert Curien Project Sakura (PIs A. Tommasi and Akira Ichikawa). Visit at University of Tokyo, JAMSTEC and HACTO lab.at ISEI at Okayama University, Misasa.
2011 – **Australia**, 2 weeks at GEMOC/CCFS, Macquarie University, Sydney. EGIDE Hubert Curien Project FAST (PIs S. O'Reilly and O. Alard).
2011 – **France**, 2 weeks, high pressure research at LVM, Clermont-Ferrand. (collab. N. Bolfan-Casanova).
2011 – **Germany**, 1 week for X-ray diffraction at the Bayerisches Geoinstitut, University Bayreuth. Marie-Curie IRG PoEM to SD.
2010 – **USA**, 2 weeks, high pressure deformation experiments at the Dept. Geology and Geophysics Geoinstitut, University of Minnesota, Minneapolis. Marie-Curie IRG PoEM.
2008 – **Germany**: 4 weeks, high pressure experiments at the Bayerisches Geoinstitut, University Bayreuth. Marie-Curie large–scale facilities grant to BGI.



Editorial service

Since 01/03/2025 - Associate editor/Topic editor, **Solid Earth** (EGU-Copernicus).
2024 ***Elements Magazine*** Vol.20, n°4, Guest Editor (with Hélène Bureau and Hans Keppler) for *a special issue.*
The Invisible Ocean: Hydrogen in the Deep Earth.



2022-2024 *Geosciences* Encyclopedia, ISTE (in French and English). **Structure et dynamique de l'intérieur de la Terre, vol. 2 : Composition et Structure du manteau Terrestre**. *Eds. Sylvie Demouchy & N. Bolfan Casanova.*
Since 27/04/2021 - Associate editor, Frontiers - Solid Earth & Geophysics

Since 01/01/2020 - Member of the Executive committee Element Magazine, SFMC delegate. http://elementsmagazine.org/about/executive-committee/

Since 01/09/2018 - Associate editor, **American Mineralogist.**

International responsibilities

2014-2025: Member of the International Scientific Committee of the XIXth EMPG (Symposium on Experimental Mineralogy Petrology and Geochemistry), Orléans-Ferrand, France.

2024, 2025: Member of EMU Excellent in Research Medal committee. Chair in 2024.

2024-2027: Member of Petra III/DESY Proposal Review Panel (P02.2 (diamond anvil cell) & P61P (large volume press) – Hamburg, Germany.

2022-2023: Member of Canvasing Committee – Mineral and Rocks Physics, American Geophysical Union (AGU).

Since 2021: Member of Distinguished Public Service Medal Committee for Mineralogical Society of America (MSA).

2021-2024: Elected-Secretary of the International Mineralogical Association (IMA). Member of the IMA executive committee and council officers.

2020-2022: Member of the National Organization Committee of the IMA (23rd General Meeting of the International Mineralogical Association), Lyon, France.

2018: Member of the International Scientific Committee of the XVIth EMPG (Symposium on Experimental Mineralogy Petrology and Geochemistry), Clermont-Ferrand, France.

National responsibilities

2024: Member of the organizing committee 14^{e} French High-Pressure Forum, Argelès-sur-mer, France.

Since 11/2023: Nominated-member of the "Commission National des Universités" Section 35-Structure and evolution of Earth and other Planets (3 meetings per years, evaluation for promotion of Assistant Prof. Associate Prof. and Professors).

2023: Member of the organizing committee Workshop ISTO-OSUC-LMV-OPGC, May 2023, Clermont-Ferrand, France.

2022: Member organizing and scientific committees 'Atelier Experimentation & Instrumentation, CNRS-INSU', Montpellier, France.

Since 07/2021: Nominated-member of the CNRS INSU "Commission Spécialisée Instrumentations Innovantes Transverses" (13 meetings per years and project evaluations).

2022: Nominated-member of the scientific committee of 'Journée SFMC 2022', Lille University, France.

2020 & 2022 Secretary of the SFMC Merit Award committee (https://sfmc-fr.org/?page_id=2384&lang=fr).

2020: Member of the organizing committee 12^{e} French High-Pressure Forum, île D'Oléron, France.

Since 2020, Nominated-member of the executive committee of the national (French) high pressure network (CoPil réseau HP, http://www.reseauhp.org). Member of the Besson Award committee (Best French PhD Award using high pressure techniques).

2019 Nominated-member of the evaluation panel of ANR-CES31 (Blanc & JCJC & internat.).

2018 Nominated-member of the evaluation panel of ANR-CES31 (Blanc & JCJC & internat.).

2018-2019: External reviewers for the PEDR/PIU Paris Sorbonne University, France.

2018-2021: Elected-scientific advisor, French Mineralogical Society, (http://sfmc-fr.org), which include PhD thesis evaluation for the national PhD award in mineralogy and crystallography (cf. Prix Haüy-Lacroix).

2018: Member of the local organizing committee 11^{e} French High Pressure Forum, Sète, France.

2012-2016: Elected-member of the CNRS evaluation and hiring committee in Earth Sciences (Comité National CNRS section 18).

2013: Member of the evaluation panel of ANR-SIMI06 (Blanc, JCJC & bilatéraux).

2012: Member of the evaluation panel of ANR-SIMI06 (Blanc & JCJC).

Faculty responsibilities

Since 2024: Elected-member of the teaching commission (conseil pédagogique) of Observatoire de Physique du Globe de Clermont-Ferrand, Université Clermont Auvergne.

Since September 2022: CorrEgal at LMV. Correspondante pour l'égalité homme-femme au travail (includ specific training and seminars). Invited member of LMV board.

2022-2024: Elected-member of the Advisory Board (conseil d'administration) of Observatoire de Physique du Globe de Clermont-Ferrand, Université Clermont Auvergne.

Jan 2021-Jan 2022: Nominated-member of the Scientific Board (conseil scientifique) of Geosciences Montpellier, University of Montpellier.

Jan 2021-Jan 2022: Co-leader with R. Soliva of the new research theme 'Deformation' at Geosciences Montpellier.

2015-2022: Co-manager with B. Gibert of the High Pressure Lab at Geosciences Montpellier.

2018-jan 2022: Nominated-member of the advisory board (conseil du laboratoire) of Geosciences Montpellier, University of Montpellier.

2015-2020: Scientific manager of the Petrophysics Plateform at Geosciences Montpellier (tech. management: Eng. Richard le Provost).

2016, 2019: Nominated-member of the admissibility jury of the doctoral School GAÏA (U. Montpellier).

2007-2017: Member of specialist commission, University of Montpellier, section 35.

2013-2016: Member of the user Committee of the "Micro-Sonde SUD" facility (electron microprobe and SIMS of the university of Montpellier 2).

2008 - 2014: Co-manager with D. Mainprice of the Petrophysics lab (the Paterson's rig #2) at Geosciences Montpellier.

2005 - 2007: Co-manager with M.E. Zimmerman of the Paterson's rig #3 at Dept. Geology & Geophysics, University of Minnesota, Minneapolis, USA.

2002 - 2003: Manager of the FTIR laboratory at Bayerisches Geoinstitut, Bayreuth, Germany.

Chair of session

EMPG- XIXth, 2025 in Orléans (France) : • Co-chairman (with G. McGill) of a session entitled « Rock Deformation».

EMC2024 - Dublin: • Convener and chairman (with Davide Novella and Mike Jollands) of the session on "Water in the deep (and not so deep) Earth".

IMA 2022: In Lyon (France), one session:

• Convener and chairman (with Hélène Bureau et Toru Inoue) of the session on "Volatiles in Planetary Interiors".

Goldschmidt 2021: In Lyon (France), two sessions:

• Convener and chairman (with Caroline Bollinger, Silvio Ferrero, Marian Holness, Benjamin Gilbert, Han Deng, Gautier Nicoli) of the session (theme 06b) entitled "From crystals to dynamic processes: the role of nano- and micro-structures in geochemical processes".

• Co-convener (with José-Alberto Padron-Navarta and Mike Jollands) of the session (theme 2b) entitled "Water in nominally anhydrous minerals: detection, distribution and consequences."

2019 ITN CREEP final Meeting, école de physique, Les Houches, Jan 2019, (France) • Chairman of the PICO Poster session & Chairman of the Applied Rheology session.

AGU 2018: Fall meeting: • Co-convener (with K. Sigloch, Z. Zhan, and F. Garel) of a *Study of the Deep Earth* session entitled DI22 "Subducting slabs in the Mantle".

EMPG-XVI 2018 in Clermont-Ferrand (France) : • Co-chairman (with B. Schmidt) of a session entitled « Volatiles in NAMS and Melts». • Jury of the EMPG-XVI student award.

Goldschmidt 2017: In Paris (France) • Convener and co-chairman (with Katharina Marquardt, Lars Hansen, Stewart McWilliams) of the session (07e) entitled "Diffusion, Deformation and Transport Processes in Geomaterials".

College de France, 2016, Paris, (France) • Chairman of the session "Upper mantle deformation » within the "Flow in the Earth's mantle" seminar organized by B. Romanowicz and P. Cordier, Collège de France

EMC 2016: In Rimini (Italia) • Convener and co-chairman (with Katharina Marquardt, Juan Jimenez-Millan, Martine Buatier and Cecilia Viti) of a session entitled "Diffusion, mineral reaction and deformation mechanisms from low to high temperatures: flow and brittle processes of the Earth's interior".

AGU 2012: Fall meeting: • Convener and co-chairman (with T. Yoshino, R. Dohmen, and W.C. Durham) of a *Mineral & Rock Physics* session entitled " All about Olivine".

EMC 2012: in Frankfurt (Germany): • Convener and co-chairman (with H. Keppler, and G. Bromiley) of a *Mantle petrology and Geochemistry* session 1d entitled "Earth´s deep volatile cycle".

AGU 2011: Fall meeting: • Convener (with D.L. Kohlstedt, and A. Kronenberg) of a *Tectonophysics* session T02 entitled "Creep and Faulting in nature, the lab and theory III: Roles of water in failure mode, creep laws, and deformation mechanisms".

AGU 2010 Fall meeting, two sessions,

• Convener and co-chairman (with D.L. Kohlstedt, and T. Hiraga) of a *mineral & rock physics* session MR10 entitled "Mind the Grain Boundaries! New Advances in Investigating Grain Boundaries and their Impact on Mantle Processes".

• Convener and co-chairman (with P. Ruprecht) of a *volcanology, petrology and geochemistry* session V20 entitled "Volatiles in Magmas: the Breath of the Deep Earth".

EMPG 2010 in Toulouse (France) : • Co-chairman (with N. Bolfan-Casanova and H. Bureau) of a session entitled « Volatiles in Solids and Melts, Hydrous Magmatisms and Fluid Processes ».

AGU 2009 Fall meeting: • Convener and chairman (with C. Lesher, S.-K. Lee, S. Keshav and R. Caracas) of a *mineral & rock physics* session MR11entitled "Masters of Terrestrial Igneous Activity: Magmas, Melts and Fluids".

AGU 2006 Fall meeting: • Convener and co-chairman (with Dr. K. Cooper) of a *volcanology, geochemistry and petrology* session V15 entitled: "Crystal-scale records of magmatic processes".

AGU 2005 Fall meeting: • Convener and co-chairman (with Prof. J. Smyth) of a *mineral & rock physics* session MR07 entitled: "effect of hydration on the physical properties of minerals".

Reviewer for scientific journals

Nature, Science, Nature Communication, Science Advances, Proceedings of the National Academy of Sciences, Nature Geosciences, Geology, Earth and Planetary Science Letters, Geochemical Perspective Letters, Journal of Geophysical Research, Journal of Petrology, Physics and Chemistry of Minerals, Mineralogy and Petrology, Contribution to Mineralogy and Petrology, Physics of the Earth and Planetary Interiors, Geophysical Research Letters, American Mineralogist, European Journal of Mineralogy, Geochimica Cosmochimica Acta, Chemical Geology, G-cubed, Meteorites and Planetary Sciences, Journal of Structural Geology, Journal of Metamorphic Geology, AGU Monograph, Solid State Ionics, Review of Scientific Instruments.

Review for funding agencies and large instruments

ANR, CNRS-INSU, NSF, DOE, ERC, DFG, NERC, DESY/Petra-III

Book review (invited)

http://www.geochemsoc.org/publications/geochemicalnews/gn135apr08/bookreviewrimgv62.htm

Science outreach

2023-2024 - **New IMA website**. https://mineralogy-ima-wordpress.website

2022 - **"Année de la Minéralogie"** Exhibition at the Science Library, Cézeaux campus, l'UCA, Aubière. https://expos-virtuelles.bu.uca.fr/expo-mineraux/

2022 - **Les Curionautes des Sciences** - Qu'y a-t-il au centre de la Terre ?(https://www.curionautes.com) Pres magazine - Sciences for kids (8-12 years).

2021 - **Sciences Olympiads, Award Ceremony** /1.2 full days of animation at the Geosciences Montpellier, high pressure Lab. Montpellier University, France.

2019 - **National Fair for Science** /Fête de la Science: 150 years of the Periodic Table and georessources. 2 full days of animation at the Geosciences Montpellier booth - Faculté d'éducation, Montpellier, France.

2018 - **National Fair for Science** /Fête de la Science: how mountains grow? 2 full days of animation at the Geosciences Montpellier booth - Faculté d'éducation, Montpellier, France.

Since 01/2017: Representing the mantle research group in the **communication committee** of Geosciences Montpellier and in the **redaction committee** of the Dept. newsletter: "Bulletin Géoscience-infos".

2018 - **Invited SHHNH Conference** (Société d'horticulture et d'histoire naturelle de l'Hérault). L'eau dans le manteaux terrestre, Fridy 25 May, University of Montpellier.

2017 - **National Fair for Science** /Fête de la Science: the color of the Earth. 1 full day of animation at the Geosciences Montpellier booth - Faculté d'éducation, Montpellier.

2016 - **Open-door days** at University Montpellier. 1 full day of animation at the Geosciences Montpellier booth.

2014 - **National Fair for Science** /Fête de la Science: What is a crystal? 1 full day of presence/animation at the Geosciences Montpellier booth - Genopolys Montpellier.

2012 - 2014: Representing the mantle research group in the **redaction committee** of the Dept. newsletter: "Géoscience-infos".

2010-2012: Leader of the **redaction committee** of the Dept. newsletter: "Géoscience-infos".

2010 - **National Fair for Science** /Fête de la Science: Volcanism in Iceland & Regional Volcanism. 3 half-days of animation at the Geosciences Montpellier booth - Botanic Garden of Montpellier.

2008-2010: In charge of the internal **seminar program** at Géosciences Montpellier.

2002-2004: In charge of the **electronic newsletter** for the HYDROSPEC Marie Curie TMR research network.

Memberships

Société Française de Minéralogie et de Cristallographie (since 2006)
Société Géologique de France (since 2021)
American Geophysical Union (since 2002)
Mineralogical Society of America (since 2003)
Geochemical Society (2008-2010, 2017-2019)
Mécamat (since 2025)

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ISI Web of Science (all databases): Publications: 77+2 book chapters
Citations: 3299
H-index: 30
24 articles as first author,
2 book chapters as first author,
9 as second author after a student,
9 as third author after a student.

[T] denotes a PhD paper
* denotes a supervised or co-supervised PhD or master student.
[S] denotes a collaboration with a PhD student, supervised by a colleague.

In review/revision

(80). **Demouchy, S.,** Thoraval C., Gardés, E., Bolfan-Casanova N., Boffa-Ballaran T., Manthilake, G. (202X). Hydrogen diffusivity in iron-bearing olivine at asthenospheric mantle conditions. Submitted to *Earth Planet Sci. Lett.*, May 2025.

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79. *Dujardin, A., **Demouchy, S.,** Alard, O., Gardés, E., Laubier, M., Barou, F. (2025) Ultra-mafic cumulates from Kaupulehu, Hualalai volcano, Hawaii: Geochemical Resetting of Mantle-inherited Olivine**.** *Geochem, Geophys, Geosystems*, https://doi.org/10.1029/2024GC012128.
78. [S]Chauvigné, P., Manthilake, G., Andrault, D., Chantel. J., Gardés, E., **Demouchy, S.**, Barou, F., Mathieu, M., Hennet, L., Henry, L., Guignot, N., Bolfan-Casanova, N. (2025) Seismic structure of Martian mantle inferred from in situ sound velocity measurements. *Phys. Earth Planet. Int.*, 365, 107378, https://doi.org/10.1016/j.pepi.2025.107378.
77**. Demouchy S.**, and Cordier P. (2025) « Chapter 7: The Earth's Mantle Rheology» in the Earth's Mantle 2. p.221-248*Eds. Sylvie Demouchy and N. Bolfan Casanova*. Theme Solid Earth. Geosciences Encyclopedia, Editor ISTE. ISBN: 9781789451665. ***(book chapter in English).***

2024

76. **Demouchy S.,** and Cordier P. (2024) « Chapitre 7 : La rhéologie du manteau » *in* « Structure et dynamique du manteau terrestre 2 » *p.239-268. Eds. Sylvie Demouchy and Nathalie Bolfan Casanova. Thème Terre Solide. Geosciences Encyclopedia*, Editor. *ISTE*. ISBN ebook: 9781789491661, ISBN paper: 9781789481662. *doi: 10.51926/ISTE.9166.ch7*. ***(book chapter in French).***

75. **Demouchy, S.,** Barou, F., Ishikawa, A., Gardés, E., Tommasi, A. (2024) Microstructures, water contents, and seismic properties of a tectonically exhumed sliver of oceanic lithosphere from the Moa Island, Timor-Tanimbar outer-arc, eastern Indonesia. *Tectonophysics*, 887, 230443, https://doi.org/10.1016/j.tecto.2024.230443.
74. Novella D., **Demouchy, S.,** Bolfan-Casanova, N. (2024). Deep Hydrogen Reservoirs and Longevity. (Invited article) - Thematic issue: 'The Invisible Ocean: Hydrogen in the deep Earth'. *Elements,* 20(4), 235-240. https://doi.org/10.2138/gselements.20.4.235.
73. Furstoss, J., **Demouchy, S.,** Tommasi, A., Gardés E., Barou, F., Marino, N., (2024) Quantification of grain boundary mobility in natural olivine by annealing experiments and full-field modeling. *Tectonophysics*, 880, 230333, 10.1016/j.tecto.2024.230333.
72. [S]Weidner, T., Taupin, V., **Demouchy, S.,** Gouriet, K., Guitton, A., Cordier, P., Mussi, A. (2024). From electron tomography of dislocations to field dislocation mechanics: Application to olivine. *Simulation in Materials Science and Engineering,* 32, 015004. https://doi.org/10.1088/1361- 651X/ad0a42
71. **Demouchy, S.**, Mussi, A. Weidner, T., Gardés E., Cordier, P. (2024). Dislocations in naturally deformed olivine: example of a mylonitic peridotite. *Physics of the Earth and Planetary Interiors. 346,* 107125. https://doi.org/10.1016/j.pepi.2023.107125

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70. **Demouchy, S.,** Wang Q. and Tommasi, A. (2023). Driving Upper Mantle Flow - Olivine Mechanical Properties and Anisotropy. *Elements*, 19, 151-157. doi: 10.2138/gselements.19.3.151.
69. **Demouchy, S.,** Thieme, M., Barou F., Beausir B., Taupin V., Cordier P. (2023). Dislocation and disclination densities in experimentally deformed polycrystalline olivine. *Eur. J. Mineral.*, 35, 219–242, https://doi.org/10.5194/ejm-35-219-2023.

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68. Wang, C., Zhang, Z., Giuliani, A. **Demouchy, S.,** Thoraval, C., Krmíček, L., Bo, H., Zhang, W., Xiaoping Xia, X. (2022) Hydrogen concentrations and He isotopes in olivine from ultramafic lamprophyres provide new constraints on a wet Tarim plume and Earth's deep water cycle. *J. Geophys. Res.* Solid Earth, 127, e2022JB02496, doi: 10.1029/2022JB024961.
67. Alard, O., Halimulati, A. & **Demouchy, S.** (2022) Look between the grains. *Nat. Geosci.* 15, 856–857 (invited correspondence). https://doi.org/10.1038/s41561-022-01065-3.
66. Jollands, M.C., Muir, J., Padron-Navarta, J.A., **Demouchy, S**. (2022). Hydrogen mobility in forsterite re-evaluated in the framework of diffusion coupled to inter-site reaction. *Contrib. Min. 177, 98, Petrol*. https://doi.org/10.1007/s00410-022-01954-1.
65. Idrissi, H, Béché, A., Gauquelin, N., Ul Haq, I., Bollinger, C., **Demouchy, S.,** Verbeeck, J., Pardoen, T., Schryvers, D., Cordier, P. (2022). On the formation mechanisms of shear bands in olivine by stress-induced amorphization. *Acta Mater., 118247, https://doi.org/10.1016/j.actamat.2022.118247*
64. Condamine, P., Tournier, C.S., Charlier B., Médard, E., Triantafyllou, A., Dalou, C., Tissandier, L., Lequin, D., Cartier, C., Füri, E., Burnard, P.G., **Demouchy, S.,** Marrocchi, Y. (2022) Influence of intensive parameters and assemblies on the pressure

reproducibility and friction evolution during piston-cylinder experiments. *Am. Min.* 107, 1575-1581.
doi: 10.2138/am-2022-7958.

63. Lopez-Sanchez, M.A., **Demouchy, S**., Thoraval, C. (2022) Comment on "If not brittle: Ductile, Plastic, or Viscous? By Kelin Wang". *Seismol. Res. Lett.* 93(3), 1960-1965. https://doi.org/10.1785/0220210191

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61. Ben Ismail, W., Tommasi, A., Lopez-Sanchez M. A., Rutter E., H., Barou, F., **Demouchy S.,** 2021.Deformation of upper mantle rocks with contracting initial fabrics in axial extension. *Tectonophysics*, 815, 228997, https://doi.org/10.1016/j.tecto.2021.228997.
60. Le Roux, V., Urann, B. M., Brunelli, D., Bonatti, E., Cipriani, A., **Demouchy, S.,** Monteleone, B.D., (2021) Post-melting hydrogen enrichment in the oceanic lithosphere, *Science Advances*, 7, eabf6071. https//doi/10.1126/sciadv.abf6071
59. [S]Pozzi, G., De Paola, N., Nielsen, S.B., Holdsworth, R.E., Tesei, T., *Thieme, M. and. **Demouchy, S.,** (2021) Coseismic fault lubrication by viscous deformation. *Nat. Geosci.*, 14, 437-442, https://doi.org/10.1038/s41561-021-00747-8.
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57. **Demouchy, S.,** and Alard O. (2021) Hydrogen, minor, trace and ultra-trace elements distribution in natural olivines. *Contrib. Mineral. Petrol.* 176, 26, https://doi.org/10.1007/s00410-021-01778-5.
56. Samae V., Cordier, C., **Demouchy, S**., Bollinger C., Gasc, J., Koizumi S., Mussi A., Schryvers, D., and Idrissi H., (2021) Stress-induced amorphization triggers deformation in the lithospheric mantle. *Nature*. 591, 82-86. https://doi.org/10.1038/s41586-021-03238-3.
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53. [S]Ding, L., Doss K., Yang, Y., Lee K.H., Bockowski, M., Ziebarth, B., Wang Q., Smedskjaer M.M., **Demouchy, S.,** Thieme, M., and Mauro, J.C., (2020) Volume relaxation in a borosilicate glass hot compressed by three different methods. *Journal of the American Ceramic Society*, doi: 10.1111/jace.17482.
52. [S]Maurice, J, Bolfan-Casanova, N., **Demouchy, S.,** Chauvigné P., Schiavi F., Debret, B., (2020) The intrinsic nature of antigorite breakdown at 3 GPa: Experimental constrains on redox conditions of serpentinite dehydration in subduction zones. *Contrib. Min. Petrol.,* 175, 94. doi: 10.1007/s00410-020-01731-y.

51. Garel, F. Thoraval, C., Tommasi A., **Demouchy, S.,** Davies R. (2020) Using thermo-mechanical models of subduction to constrain effective mantle rheology. *Earth Planet Sci. Lett.*, 539, 116243, https://doi.org/10.1016/j.epsl.2020.116243.
50. Monteux J., Andrault, D., Guitreau, M., Samuel, H., **Demouchy, S.,** (2020). A mushy Earth's mantle for more than 500 Myr after the magma ocean solidification. *Geophys. J. Intern.* https://doi.org/10.1093/gji/ggaa064.
49. *Delon R., **Demouchy, S.,** Marrocchi Y., Bouhifd, M.A., Gasc J., Cordier P., Koizumi S., & Burnard. P.A., (2020) Effect of deformation on helium storage and diffusion in polycrystalline olivine. *Geochim. Cosmochim. Acta.* https://doi.org/10.1016/j.gca.2020.01.018.
48. [S]Nzogang, B.C., *Thieme, M., Mussi A., **Demouchy, S.,** and Cordier P., (2020) Characterization of recovery onset by subgrain and grain boundary migration in experimentally deformed polycrystalline olivine, *Eur. J. Mineral,* 31, 13-26, https://doi.org/10.5194/ejm-32-13-2020.

2019

47. Gasc, J., **Demouchy, S.,** Barou F., Koizumi, S., and Cordier, P. (2019) Creep mechanisms in the lithospheric mantle Inferred from deformation of iron-free forsterite aggregates at 900-1200 °C, *Tectonophysics*, 761, 16-30, https://doi.org/10.1016/j.tecto.2019.04.009.
46. *Delon R., **Demouchy, S.,** Marrocchi Y., Bouhifd, M.A., Cordier P., Addad A., & Burnard. P.A., (2019) Argon storage and diffusion in Earth's upper mantle, *Geochim. Cosmochim. Acta.* 253, 1-18, 10.1016/j.gca.2019.03.007.
45. Gouriet K., Cordier, P., Garel, F., Thoraval, C., **Demouchy, S.,** Tommasi, A., Carrez, P. (2019) Dislocation Dynamics modelling of the power-law breakdown in olivine single crystals: toward a unified creep law for the upper mantle. *Earth Planet Sci. Lett.* 506, 282-291, doi.org/10.1016/j.epsl.2018.10.049.
44. Thoraval, C., **Demouchy, S.,** Padron-Navarta, J.-A., (2019) Relative diffusivities of hydrous defects from partially dehydrated natural olivine. *Phys. Chem. Minerals.* 46, 1-13, doi: 10.1007/s00269-018-0982-x.
43. **Demouchy, S.,** Tommasi, A., Ionov, D., Higgie K., Carlson R.W. (2019) Microstructures, water contents, and seismic properties of the mantle lithosphere beneath the northern limit of the Hangay Dome, Mongolia. *Geochem, Geophys, Geosystems.* doi.org/10.1029/2018GC007931.

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42. Bolfan-Casanova, N., Schiavi, F., Novella, D., Bureau, H., Raepsaet, C., Khodja, H., **Demouchy, S.,** (2018) Examination of water incorporation in transition zone minerals: Wadsleyite, ringwoodite and phase D using ERDA (elastic recoil detection analysis). *Frontiers Earth Science.* doi: 10.3389/feart.2018.00075.
41. *Delon, R., **Demouchy, S.,** Marrocchi, Y., Boudhifd, M.A., Barou, F., Cordier, P., Addad, A., Burnard, P.A. (2018) Helium incorporation and diffusion in polycrystalline olivine. *Chem Geol.* doi:10.1016/j.chemgeo.2018.04.013
40. [S]Ding, L., *Thieme, M., **Demouchy, S.,** Kunisch, C., Kaus, B. (2018) Effect of pressure and temperature on viscosity of N-BK7 glass. *Journal of the American Ceramic Society*, doi: 10.1111/jace.15588.

39. *Thieme, M., **Demouchy, S.,** Mainprice, D., Barou, F., Cordier, P. (2018) Stress evolution and associated microstructure during transient creep of olivine at 1000-1200 °C, *Phys. Earth Planet. Int.*, 278, 34–46 doi: 10.1016/j.pepi.2018.03.002. (https://hal.archives-ouvertes.fr/hal-01746122)
38. *Denis, C.M.M, **Demouchy, S.,** Alard, O. (2018) Heterogeneous hydrogen distribution in orthopyroxene from veined mantle peridotite (San Carlos, Arizona): Impact of melt-rock interactions. *Lithos*, doi:10.106/j.lithos.2018.01.007.

2017

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36. **Demouchy, S.,** Shcheka, S., Denis, C.M.M., Thoraval, C., (2017). Subsolidus hydrogen partitioning between nominally anhydrous minerals in garnet-bearing peridotite. *Am. Min.* 102, 1822-1831.
35. [S]Satsukawa, T, Godard, M, **Demouchy, S.,** Michibayashi, K., and Ildefonse, B., (2017). Chemical interactions in the subduction factory: New insights from an in situ trace elements and hydrogen study of the Ichinomegata and Oki-Dogo mantle xenoliths (Japan). *Geochim. Cosmochim. Acta.* 208, 234-267. doi : 10.1016/j.gca.2017.03.042.

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2015

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23. **Demouchy, S.,** Mussi, A, Barou, F., Tommasi A., Cordier P. (2014). Viscoplasticity of polycrystalline olivine at high pressure and 900 °C: outcomes from high resolution EBSD and electron tomography. *Tectonophysics*, 623,123-135, doi:10.1016/j.tecto.2014.03.022.
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wadsleyite under hydrous and oxidizing conditions: a XANES, Mössbauer and SIMS study. Am. Min. 97:1483-1493.

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2011

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2009

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2008

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2006

7. [T] Walker, A.M., **Demouchy, S.,** and Wright, K., (2006) Computer modelling of the energies and vibrational properties of hydroxyl groups in **α**- and **β**-Mg_2SiO_4. *Eur. J. Mineral,* 18 (5) : 529-543.

6. ᵀ **Demouchy, S.,** and Mackwell, S., (2006). Mechanisms of hydrogen incorporation and diffusion in iron-bearing olivine. *Phys. Chem. Minerals,* 33 :347-355.
5. ᵀ **Demouchy, S.,** Jacobsen, S.D., Gaillard, F., Stern C.R., (2006). Rapid magma ascent recorded by water diffusion profiles in mantle olivine. *Geology*, 34 : 429-432.

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4. ᵀ **Demouchy, S.,** Deloule, E., Frost, D.J., Keppler H. (2005). Temperature and pressure dependence of water solubility in iron free-wadsleyite. *Am. Min.,* 90 : 1084-1091.
3. ᵀ Jacobsen, S.D., **Demouchy, S.,** Frost, D.J., Boffa Ballaran, T., Kung, J., (2005). A systematic study of OH in hydrous wadsleyite from polarized FTIR spectroscopy and single-crystal X-ray diffraction: oxygen sites for hydrogen storage in the Earth's interior. *Am. Min.,* 90 : 61-70.

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2. ᵀ Bureau H., Trocellier P., Shaw C., Khodjia H., Bolfan-Casanova N. and **Demouchy, S.,** (2003) Determination of the concentration of water dissolved in glasses and minerals using nuclear microprobe. *Nuclear Instrument Methods.* ICNMTA 2002. Special issue, B201 : 449-454.
1. ᵀ **Demouchy, S.,** Mackwell S. (2003). Water diffusion in synthetic iron-free forsterite. *Phys. Chem. Minerals.* 30:786-794.

Invited seminars & conference talks

56. Demouchy, S., Dujardin, A., Garés, E., Alard, O., Barou, F. (11-13/09/2024) Ductile deformation of olivine: Insight from Hawaii. Fifth meeting ERC-Adv « TimeMan», EMAT/Univ. Antverpen, Belgium.
55. Demouchy S. (16/05/2024) Everything Flows, but how? Inferring the Role of Novel Agents of Ductile Deformation in Olivine. Invited seminar, Bayerisches Geoinstitut, Bayreuth University, Germany.
54. Demouchy S. (14/03/2024) Everything Flows, but How? Inferring the Role of Novel Agents of Ductile Deformation in Olivine. Invited seminar, ANU, RSES, Canberra, Australia.
53. Demouchy S. (30/11/2022) Everything Flows, but how? Inferring the Role of Novel Agents of Ductile Deformation in Olivine. Invited seminar, Geosciences Montpellier, France.
52. Demouchy S. (06/09/2022) Everything Flows, but how? Inferring the Role of Novel Agents of Ductile Deformation in Olivine. Invited seminar, Laboratoire Magmas et Volcans, France.
51. Demouchy S. (10/08/2022) Everything Flow, but how? Inferring the Role of Novel Agents of Ductile Deformation in Olivine. Invited seminar, Gordon Research Conference "Lab to Lithosphere", 'Mantle rheology' session, Bates College, USA.
50. Demouchy S., Thieme M., Barou, F., Beausir, B. & Cordier P. (21/02/2022) Sur l'utilisation de la diffraction des électrons rétrodiffusés pour sonder la déformation plastique de l'olivine mono- et poly-cristalline. Invited talk. Journée scientifique SFMC 2022 – « Imagerie quantitative de l'atome à l'étoile ». Lille, France.
49. Demouchy S. (14/07/2021) Ecole de Physique des Houches: Experimental petrology /Mineralogy and the effect of 'water' on Earth's mantle rheology, Les Houches, France.
48. Demouchy S. (07/06/2021) Webminar – ERC Rheovolution – Deformation of polycrystalline forsterite at 900-1200 °C: the role and nature of grain boundary sliding.

47. Demouchy S. (14/01/2021) Webminar – Mobility and Impact of Hydrogen in the Earth Lithosphere, Virtual department seminar, The Center for Earth Evolution and Dynamics (CEED), University of Oslo, Norway.
46. Demouchy S & Cordier P. (June 2020) Mechanisms of ductile deformation in the lithospheric mantle, Virtual Keynote at the Goldschmidt conference, session 3f. https://doi.org/10.46427/gold2020.547
45. Demouchy S. and Alard O. (12/2019) Hydrogen incorporation in olivine: Insight from minor, trace and ultra-traces atomic impurities**,** AGU FM invited talk, abs V53C-08.
44. Demouchy S. (14/11/2019) Distribution and Mobility of Hydrogen in the Earth Lithosphere, Department seminar, Dept of Geology and geophysics, IIT Kharagpur, India.
43. Demouchy S. (18/10/2019) Distribution and Mobility of Hydrogen in the Earth Lithosphere, SGT seminar, ETH Zürich, CH.
42. Demouchy S. (8-9/10/2019) Everything flows, but how? The geological approach. First meeting ERC-Adv « TimeMan», UCLouvain, Belgium.
41. Demouchy S. (25/06/2019) Olivine & Hydrogène & Rhéologie. ENS Paris, France.
40. Demouchy S. (30/04/2019) Olivine & Hydrogène & Rhéologie. Laboratoire Magmas et Volcans, Université Clermont Auvergne, France.
39. Demouchy S. (April 2019) H as a (good?) recorder of magma ascent rates. Short Course: Diffusion in the Earth Sciences: Theory and Applications. Lausanne Univ. Conférence Universitaire de Suisse Occidentale, CH.
38. Demouchy S. (2019) Distribution of hydrogen in the deep Earth: reports from the lab and rumors from the fields. 25/02/2019. ENS Lyon, France
37. Demouchy S. (2019) Everything flow, but how? Future tributes from natural samples and laboratory experiments. 06/02/2019. Kick-off meeting ERC-Adv «TimeMan» , PI: P. Cordier, UMET, Lille Univ. France.
36. Demouchy S. (2017) Distribution of hydrogen in the deep Earth: reports from the lab and rumors from the fields. 30/10/2017. Chinese University for Geosciences, State Key Laboratory of GPMR, Wuhan, China.
35. Demouchy S. (10/2017) Effect of hydrogen on the rheology of the deep Earth: an update review. 10/2017, Zhejiang University, School of Earth Sciences, Hangzhou, China.
34. Demouchy S. (10/2017) Distribution of hydrogen in the deep Earth : reports from the lab and rumors from the fields. Zhejiang University, School of Earth Sciences, Hangzhou, China.
33. Demouchy S. (2017) Diffusion of Hydrogen in the Earth's Mantle & Consequences for our Planet, EMU Research excellence, medal lecture - invited talk, Goldschmidt conference, Paris, France.
32. Demouchy S. (2017) Distribution of Hydrogen in the Deep Earth: reports from the lab, rumors from the fields, & consequences for our Planet. 15/05/2017, UMET, Lille 1 University, France.
31. Demouchy S. (2017) Distribution of Hydrogen in the Deep Earth : reports from the lab, rumors from the fields, & consequences for our Planet. 27/03/2017, IMPMC, UPMC, Paris, France.
30. Demouchy S., Shcheka S., and Denis C.M.M., (2016). Distribution and transport of hydrogen in the lithospheric mantle: The message from the peridotite xenoliths. New challenges in volatile cycling in the deep Earth workshop, Tohuku University, Sendai, Japan.
29. Demouchy S., (2016). Distribution and transport of hydrogen in the lithospheric mantle: The message from the peridotite xenoliths. Goldschmidt conference, Yokohama, Japan.
28. Demouchy S., (2016) The "rock-squeezer" point of view. First ITN-CREEP workshop, Sète, France.
27. Demouchy S., and Burnard P. (2015) Volatiles (H, He, Ar) in olivine grain boundaries. AGU FM, Session MR12.
26. Demouchy S., (2013). Déformation en compression tri-axial de monocristaux d'olivine à basse température: Implication pour le rhéologie du manteau terrestre'. Laboratoire Magmas et Volcans, Université Blaise Pascal, Clermont-Ferrand, France.

25. Demouchy S., (2012). Solubility and Diffusivity of Water in the Deep Earth: highlight from recent lab and fields studies, and possible consequence for the Earth. HACTO lLab, Institute for the Study of the Earth Interior, Okayama University, Misasa, Japan.
24. Demouchy S, (2012). Solubility and Diffusivity of Water in the Deep Earth: highlight from recent lab and fields studies, JAMSTEC, Yokosuka, Japan.
23. Demouchy S,. (2012). Olivine, wet or dry, deformed or not. University of Tokyo, Earthquake Research Institut, Hongo Campus, Tokyo, Japan.
22. Demouchy S., (2012). Solubility and Diffusivity of Water in the Deep Earth: Highlights from recent lab and fields studies". University of Tokyo, Dept. Earth Science, Komaba Campus, Tokyo, Japan
21. Demouchy S., (2012). Solubility and Diffusivity of Water in the Deep Earth: Lab & Fields, Consequences & Challenge. CRPG, Nancy, France.
20. Demouchy S,. (2012). Solubility and Diffusivity of Water in the Deep Earth: Lab & Fields, Consequences & Challenge, UMET, Lille 1 University, France.
19. Demouchy S., (2011). Solubility and Diffusivity of Water in the Deep Earth: Lab, Fields and Consequences. GEMOC, Dept Earth and planetary Science, Macquarie University, Sydney, Australia.
18. Demouchy S., Hansen, L N., Zimmermann M. E., Tommasi A., Barou, F., Kohlstedt D.L., (2011) Water weakening in dunite: Highlights from torsion experiments. Goldschmidt Conference, Prague, Czech Republic. Min Mag, 75(3):746.
17. Demouchy S., (2009). Eau et déformation dans le manteau terrestre. 3th CNRS-FORSTERITE meeting, Bonascre, France.
16. Demouchy S., (2009). Diffusion et déformation dans le manteau terrestre: Expérimentations en utilisant une presse de Paterson. Ecole National Supérieur, Laboratoire de Geologie, Paris, France.
15. Demouchy S., (2009). Water in the mantle and consequence to rheology. 1rst Crystal2Plate ITN meeting, la Grande Motte, France.
14. Demouchy S., (2008). La diffusion ionique dans l'olivine : un nouveau témoin du temps qui passé. Géosciences Montpellier, University of Montpellier, Montpellier, France.
13. Demouchy S., (2007). Diffusivity of Water in the Deep Earth: Reports from the Lab, Rumors from Patagonia. Lamont-Doherty Earth Observatory (Geochemistry Division), Palisade, USA.
12. Demouchy S., (2007). Diffusivity of Water in the Deep Earth: Reports from the Lab, Rumors from Patagonia. American Museum of Natural History (Earth & Planetary Sciences Division), New York City, USA.
11. Demouchy S., (2007). Diffusivity of Water in the Deep Earth: Reports from the Lab, Rumors from Patagonia. Dept. of Geology and Geophysics, University of Minnesota, Minneapolis, USA.
10. Demouchy S., and Kohlstedt D. L (2007). Effect of Hydrogen on the ionic diffusion in minerals. Second VLab/compress workshop, Dept. of Geology and Geophysics, University of Minnesota, Minneapolis, USA.
9. Demouchy S., (2006). Effect de l'eau sur l'interdiffusion dans le ferro-périclase. Laboratoire magma et volcans, Clermont-Ferrand, France.
8. Demouchy S., (2006). Mobilité et solubilité de l'hydrogène dans le manteau terrestre Laboratoire des transferts géologiques, Toulouse, France.
7. Demouchy S., (2006). Mobilité et solubilité de l'hydrogène dans le manteau terrestre. Laboratoire de tectonophysiques, Montpellier, France.
6. Demouchy S., (2006). Diffusivity of Water in the Deep Earth: Reports from the Lab, Rumors from Patagonia. Carnegie Inst. Geophysical Lab. Washington D.C., USA.
5. Demouchy S., Kohlstedt D. L. and Mackwell S.J., (2006). Hydrogen enhancement of Mg-Fe Interdiffusion in (Mg,Fe)O". Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract MR32A-06.
4. Demouchy S., (2006). Diffusivity of Water in the Deep Earth: Reports from the Lab, Rumors from Patagonia, Dept. Geosciences, Virginia Tech., Blacksburg, USA.
3. Demouchy S., (2004). L'eau dans le manteau terrestre: mobilité et solubilité de l'hydrogène dans l'olivine et la wadsleyite. Laboratoire Magmas et Volcans, Clermont-Ferrand, France.

2. [T] Demouchy S., Gaillard F., Jacobsen S. Stern C.R. and Mackwell S. (2003). Hydrogen Diffusion in Olivine. Geosciences Dept. London, University College London, United Kingdom.
1. [T] Demouchy S., Gaillard F., Jacobsen S. Stern C.R. and Mackwell S. (2003). Hydrogen Diffusion in Olivine. Institut für Geowissenschaften, Tübingen, Germany.

List of contributions to conferences & workshops (excluded invited seminars/talks)

[T] denotes presentations during PhD.
* denotes a student, supervised or co-supersized.
__denotes the speaker

159. Förster, M.W., Alard, O., **Demouchy. S**. Mapping the distribution of volatiles in mantle xenoliths at nano-lengthscales with Photo-induced Force Microscopy. EMAW2025, Vienna, July 2025.
158. Gardés, E. Marquardt, K., **Demouchy, S.,** Gibouin, D., Radiguet, B., David A., Prellier, W. 2025. Silicon diffusion in olivine: new experiments and review. EMPG Orléans, June 2025.
157. **Demouchy, S.**, Thoraval, C., Gardés, E., Bolfan-Casanova, N., Boffa-Ballaran, T., Manthilake, G. 2025. Effect of pressure on hydrogen diffusivity in iron-bearing olivine. EMPG Orléans, June 2025.
156. Alard, O., Veter, M., Halimulati, A., **Demouchy S.,** Foley, S., O'Reilly, S.Y., Olivine, let's talk about the elephant in the mantle room. 30/09-6/10/2024, 7th Orogenic Lherzolite Conference, Oviedo, Spain.
155. **Demouchy, S.**, Barou, F., Ishikawa, A., Gardés, E., Tommasi, A Moa Island: Hydrogen, microstructures and petrophysical properties of an exceptionally fresh mantle sliver. 30/09-6/10/2024, 7th Orogenic Lherzolite Conference, Oviedo, Spain.
154. *Halimulati., A., Alard, O., Demouchy, S., O'Reilly, S.Y., 2024. Water reservoirs and speciation in the lithospheric mantle. 25-31 August 2024, 37th IGS 2024, Busan, Korea.
153. **Demouchy, S.,** Barou, F., Ishikawa, A., Gardés, E., Tommasi, A. Hydrogen concentrations and petrophysical properties of an exceptionally fresh tectonically exhumed oceanic mantle lithosphere sliver, 18-23 August 2024, EMC2024, Dublin, Ireland.
152. Andrault, D, Pison, L., Hennet, L., **Demouchy, S.** 2024. SYLEX : *Synthèse de verre par lévitation pour l'expérimentation en conditions extrêmes, AEI 2024, 21-28 Juin 2024, Rennes.*
151. Roskosz M., F. Danoix F., Azevedo-Vannson S., Leroux H., Bolfan-Casanova N., **Demouchy S.,** Remusat L. 2023. Determination of hydrogen concentrations and speciation in terrestrial and chondritic olivines by atom probe tomography. Goldschmidt Conference 2022. Honolulu, HW, USA.
150. *Halimulati., A., Alard, O., **Demouchy, S.,** O'Reilly, S.Y., 2022. The dry but wet mantle. Goldschmidt Conference 2022. Honolulu, HW, USA.
149. Alard, O., Veter, M., Halimulati, A., **Demouchy, S**., Foley, S., O'Reilly, S.Y., Olivine, let's talk about the elephant in the mantle room. Goldschmidt conference 2022, Hawaï, US. 2022.
148. Chauvigné, P., Manthilake, G., Bolfan-Casanova, N., Chantel, J., Andrault, D., Demouchy, S., Barou, F., Hennet, L., Mathieu, A., Henry, L., Guignot, N., (2022). Seismic discontinuities and structure of the Martian mantle. IMA General Meeting conference 2022, Lyon, France.
147. Demouchy, S. Thieme, M, Barou, F., B. Beausir, Cordier, P., (2022). Dislocation and disclination densities in experimentally deformed olivine at high temperatures. IMA General Meeting conference 2022, Lyon, France.
146. Garel, F., Thoraval, C., Tommasi, A., Demouchy, S., and Davies, D. R. Self-weakening feedbacks in the ductile lithospheric mantle: looking for a realistic mantle rheology enabling plate boundary formation, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-2268, 2021.

145. Jollands, M.C., Muir, J., Padron-Navarta, J.A., Demouchy, S., *Hydrogen mobility in forsterite re-evaluated in the framework of diffusion coupled to inter-site reaction.* Goldschmidt conference 2021, Lyon, France. Session 2b.
144. Bureau H., Khodja, H., Estève, I., Charondières-Lewis, M., , Gaillou, E, Boulliard J.C., Béneut K., Cartigny, P., Demouchy, S. Elastic Recoil Detection Analysis determination of Hydrogen Content in Diamonds. Goldschmidt conference 2021, Lyon, France. Session 2b.
143. Demouchy, S. and Tommasi, A. From dry to damp but stiff mantle lithosphere by reactive melt percolation atop the Hawaii plume. Goldschmidt conference 2021, Lyon, France. Session 2b. https://doi.org/10.7185/gold2021.3176
142. Bolfan-Casanova, N., Chauvigné, P., Maurice, J., Demouchy, S., Schiavi, F., Debret, B. Experimental dehydration of natural serpentinite. EMPG-XVII, Potsdam. Germany. Post-pone 2021?
141. Thoraval, C., Garel, F., Demouchy S., Tommasi, A., Alsaif M., Geydan F., Arcay D., Cerpa, N., Hassani R., Davis Rhodri. Using Thermo-Mechanical Models of Subduction to Constrain Effective Mantle Viscosity. AGU FM 2020. ID# 666423 (DI004-0001)
140. *Halimulati., A., Alard, O., Demouchy, S., O'Reilly, S.Y., 2020. The wet but dry mantle. Goldschmidt Conference 2020. Honolulu, HW, USA.
139. Demouchy S. and Alard O. (06/2020) Hydrogen incorporation in olivine: Insight from minor, trace and ultra-traces atomic impurities**,** Virtual Goldschmidt Conference 2020. https://doi.org/10.46427/gold2020.546
138. Demouchy, S., Gasc, J., Barou F., Koizumi, S., Cordier P. Deformation of polycrystalline forsterite at 900-1200 °C and grain boundary activity. GDR-Rex Les Houches 2020. Talk. Sciencesconf.org:rex-leshouches:297778.
137. Cordier P., Samaee V., Idrissi, H, Gasc J., Demouchy S, Barou F. and Koizumi S. (10/12/2019). Microstructural investigation of olivine deforming by grain boundary sliding. AGU FM, Poster, abs MR31B-0071
136. Monteux, J., Andrault, D., S. Demouchy S., H. Samuel, H., (2019) Influence of the viscosity of the Earth's early mantle on its cooling dynamics. September 2019, European Planetary Science congress (EPSC-DPS joint meeting 2019, Genève (CH).
135. Garel, F., Thoraval, C., Demouchy S., Tommasi, A., Alsaif M., Geydan F., Arcay D., Cerpa, N., Hassani R., Davis Rhodri (2019) Rheological continuity at the Lithosphere-Asthenosphere Boundary: implications for plate dynamics and deformation. TopoEurope, Granada, Spain, May 2019.
134. Gasc, J., Demouchy, S., Cordier P., Barou F., and Koizumi, S. Deformation mechanisms in fine-grained iron-free forsterite aggregates at 900-1200 °C and 0.3 GPa. Colloque Plasticité 2019. Univ Lille, April 2019.
134. Mussi, A., Cordier, P., Gasc, J., Demouchy, S. Microstructural evidence of grain boundary sliding in iron-free forsterite aggregates deformed 900-1200 °C. Colloque Plasticité 2019. Univ Lille, April 2019.
132. Gasc, J., Demouchy, S., Barou F., and Koizumi, S., (2018) Low-Temperature Deformation Mechanisms of Forsterite Aggregates and Implications for the Rheology of the Upper Mantle. Session GD7.1. EGU 2019.
131. Demouchy, S., Gasc, J., Barou F., and Koizumi, S., (2018) Constrains on the Rheology of the Lithosphere inferred from Nano-Forsterite Deformation Experiments. AGU FM 2018. Poster. MR31B-0085.
130. Thoraval., C., Garel, F., Demouchy S., Tommasi, A., Cordier P., Gouriet K., Carrez P. (2018) New insights on the role of olivine dislocation creep rheology in subduction dynamics models. AGU FM 2018.
129. Garel, F., Thoraval, C., Demouchy S., Tommasi, A., (2018) Rheological transition at the Lithosphere-Asthenosphere Boundary: insights from geodynamics modelling using a single dislocation creep parameterization. AGU FM 2018.

128. Demouchy S., Thieme, M., Gasc, J., 2018, Plasticity of Olivine, 3rd Thematic school GDR-REX on recrystallization, 24-28/09/2018, Fréjus, France.
127. Delon R., Demouchy S., Marrocchi Y., Bouhifd, M.A., (2018) Argon incorporation and diffusion in polycristalline olivine, EMPG-16, 2018, Clermont-Ferrand, France. (Poster).
126. Demouchy, S., Shcheka, S., Denis, C.M.M., Thoraval, C. (2018) Hydrogen partitioning between NAMs in garnet-bearing peridotite at subsolidus conditions. EMPG-16, 2018, Clermont-Ferrand, France. (Poster).
125 *Thieme, M., Demouchy, S., Mainprice, D., Barou, F., & Cordier, P., (2018). Stress evolution and associated microstructure during transient creep of olivine at 1000-1200 °C. EMPG-16, 2018, Clermont-Ferrand, France.
124. *Clément M., Padrón-Navarta J.-A., Demouchy S; and Tommasi A. (2018) Oriented growth of metamorphic olivine under disequilibrium drained conditions. EMPG-16, 2018, Clermont-Ferrand, France.
123. Mussi, A., Cordier, P., Demouchy, S. (2018) Des Lignes de dislocations extrêmement mêlées vues en 3D dans l'olivine. Colloque "140 ans de la SFMC", Paris, France.
122. Gouriet K., Cordier, P., Garel, F., Thoraval, C., Demouchy, S., Tommasi, A., Carrez, P. Toward a unified creep law for olivine in the upper mantle. Session GD9.2/EMRP4.23/GMPV8.8/TS3.6/TS9 EGU. 2018.
121. *Thieme, M., Demouchy, S., Mainprice, D., Barou, F., & Cordier, P., (2017). Stress evolution and associated microstructure during transient creep of olivine at 1000-1200 °C. Session EMRP1.8/SM2.19/TS3.11, EGU. 2018.
120. Gouriet, K., Cordier, P., Boioli, F. Demouchy, S., Tommasi, A., Devincre B., (2017) A Unified creep law of olivine to define the rheology of olivine in the lithospheric mantle. AGU Fall Meet. (Talk).
119. *Thieme, M., Demouchy, S., Mainprice, D., Barou, F., & Cordier, P., (2017). Strain hardening, texture and microstructure evolution during plastic deformation of olivine at 1000-1200°C. session MR24B, AGU FM. 2017. (Talk).
118. Demouchy, S., Shcheka, S., Denis, C.M.M., Thoraval, C. (2017). H partitioning between NAMs in garnet-bearing peridotite at subsolidus conditions. AGU FM. 2017. Session V33F. (Poster).
117. Gasc, J., Demouchy, S., Barou F., and Koizumi, S., (2017) Constrains on the Rheology of the Lithosphere inferred from Nano-Forsterite Deformation Experiments. Session 21B. AGU FM. 2017. (Talk).
116. Tommasi, T., Demouchy, S., Padron, J.-A., Cordier, P., Boioli, F., Gouriet, K., Langone, A., Zanetti A., (2017) The rheology of the lithospheric mantle revisited: recent experimental data, crystal-scale models, and observations of natural systems. NetherMod 2017 Conference, Putten, Netherlands. (Poster).
115. *Thieme, M., Demouchy, S., Mainprice, D., Barou, F., & Cordier, P. (2017). Strain hardening, texture and microstructure evolution during plastic deformation of olivine at 1000-1200°C. Session 7e, Goldschmidt conference, Paris, France. (Poster).
114. Delon R., Demouchy S., Marrocchi Y., Bouhifd, M.A., & Burnard P. (2017) Storage and diffusion of helium in olivine grain boundaries, Session 4d, Goldschmidt conference, Paris, France. (Poster).
113. *Delon R., Demouchy S., Marrocchi Y., Bouhifd A., & Burnard P. (2017) Storage and diffusion of helium in olivine grain boundaries, Session 4d, DINGUE workshop, Paris, France. (Poster).
109. Demouchy S., Gasc J., Barou F., and Koizumi S. (2016) Low Temperature Rheology of Nano-Forsterite Aggregates, AGU FM-2016, MR41A-2671. (Poster).
108. Bolfan-Casanova, N., Schiavi, F., Martinek, L., Novella, D., Bureau, H., Raepsaet, C. & Demouchy, S. Water storage in the transition zone. Session S3, EMC2016, Rimini, Italy. (Talk).
107. Mussi, A., Cordier P., Nzogang, B.C., and Demouchy, S. (2016) Electron tomography study of dislocation in olivine single crystals. Session P21, EMC2016, Rimini, Italy. (Poster).

106. *Thieme, M., Demouchy, S., Mainprice, D., and Barou, F., (2016). Experimental ductile deformation of polycrystalline olivine at 1000 °C. Session P21, EMC2016, Rimini, Italy. (Poster**).**
105. Demouchy, S., (2016). Hydrogen distribution and diffusion in uppermost mantle rocks. September 2016, session P5, EMC2016, Rimini, Italy. (Poster**).**
103. Burnard, P., Demouchy, S., Delon, R ., Arnaud, N,. Bouhifd, M.A., Marrocchi, Y., Cordier, P., & Addad, A., (2016). Experimental protocol for diffusion of nobles gases in polycrystalline olivine. Abstract, Session 19c, Goldschmidt conference, Yokohama, Japan. poster
102. Delon, R., Demouchy, S., Marrocchi, Y., Bouhifd, M.A., & Burnard ,P. (2016). Incorporation and diffusion of noble gases in grain boundaries. Abstract, Session 4d, Goldschmidt conference, Yokohama, Japan
101. *Denis, C.M.M., Alard, O., Demouchy, S. (2016). Hydrogen distribution in peridotite with dyke and veins. June 2016, Abstract, Session 4d, Goldschmidt conference, Yokohama, Japan.
98. Demouchy, S., Thoraval, C., Manthilake, G.M., Bolfan-Casanova, N., (2015) Hydrogen diffusion in iron-bearing olivine at 3 GPa. AGU fall meeting 2015. Session V041. (Talk).
96. *Maurice J., Bolfan-Casanova, N., Demouchy, S., Debret, B. (2015) Experimental study of serpentine dehydration. Goldschmidt Conference 2015, Prague, Czech Republic. (Poster).
95. *Denis, C.M.M., Alard, O., Demouchy, S. (2015) Water content and hydrogen behaviour during metasomatism in the uppermost mantle beneath Ray Pic volcano (Massif Central, France). Goldschmidt Conference 2015, Prague, Czech Republic. (Poster).
94. Demouchy, S., Burnard, P., Arnaud, N., *Delon, R., Marrocchi, Y., Cordier P., Addad A. (2015) Incorporation des gases rares dans les joints de grains d'olivine à hautes pression. 26/06/2015. Journée STEP 2015. Univ. Montpellier. (Talk).
93. Demouchy, S. (2015) Effet de l'hydrogène sur la rhéologie de l'olivine mantellique, 30 April, Geoscience Montpellier, Montpellier, France. (Talk).
92. Mussi, A., Cordier, P., Demouchy, S. (2015) Caractérisation de la plasticité de l'olivine par tomographie électronique. Colloque plasticité, Autrans France.
91. Demouchy, S., Tommasi A., Cordier, P., (2014) Low strength of the shallow mantle lithosphere: Data and geodynamical consequences. AGU Fall meeting 2014, USA (talk).
90. Cordier, P., Demouchy, S., Mussi, A., Tommasi, A., (2014) New Insights on the rheology of olivine deformed under lithospheric temperature conditions. AGU Fall meeting 2014, USA (Invited Talk).
89. *Batiste, V., Vauchez, A., Tommasi, A., Demouchy S. (2014) Deformation, seismic properties and water contents of the lithospheric mantle beneath the East African Rift, North Tanzania. 6th Lherzolite Conference, Marrakech, Morroco. (Talk).
88. Demouchy S. (2014) Distribution of Hydrogen in the Mantle Lithosphere. 6th Lherzolite Conference, Marrakech, Morroco. (Talk).
87. *Denis, C.M.M., Alard, O., Demouchy, S., (2014) Water content and hydrogen behaviour during metasomatism in the uppermost mantle beneath Ray Pic volcano (Massif Central, France). 6th Lherzolite Conference, Marrakech, Morroco. (Talk).
86. Mussi, A., Cordier, P., Demouchy, S., (2014) Caractérisation des dislocations [001] dans l'olivine déformée à basse température, par tomographie électronique. Colloque plasticité 2014, Lyon, France. (Talk).
85. Tommasi, A., Vauchez, A., Mainprice, D., and Demouchy, S., (2014) Strain localisation: Shear zones in the lithospheric mantle. EGU2014-14812. (Talk).
84. Demouchy, S., Mussi, A., Barou, F., Tommasi, A., and Cordier, P. (2013) Visco-plasticity of polycrystalline olivine at high pressure and 900°C: fresh outcomes from high resolution EBSD and electron tomography. Session T012. AGU Fall meeting 2013. (Talk).
83. Cordier, P., Demouchy, S., Beausir, B., Taupin, V., and Fressengeas, C. (2013) Disclinations and grain boundary migration : evidence for a new deformation mechanism in olivine-rich rocks. Session MR14. AGU Fall meeting 2013. (Invited Talk).

82. Cordier, P., Demouchy, S., Beausir, B., Taupin, V., and Fressengeas, C. (2013) Characterization by EBSD of dislocations and disclinations in olivine: implications for the rheology of olivine-rich aggregates. Session T012. AGU Fall meeting 2013. (Poster).
81. Satsukawa T., Godard M., Demouchy S. & Michibayashi K. (2013) Heterogeneity of the uppermost mantle in back-arc settings: Insights from trace-element compositions and water contents in Japanese peridotite xenoliths. Mineralogical Magazine, 77(5), Goldschmidt conference, Florence, Italie.
80. Cordier, P., Demouchy, S., Mussi, A. and Tommasi, A. (2013) Deformation mechanisms of olivine in tri-compressed at 300 MPa and 800-1100°C. Mineralogical Magazine, 77(5), Goldschmidt conference, Florence, Italie. (Talk).
79. Demouchy, S., (2013). Déformation en compression tri-axial de monocristaux d'olivine à basse température: Implication pour le rhéologie du manteau terrestre. Journée haute pression STEP 2013. Université Montpellier 2, Montpellier, France. (Talk).
77. *Baptiste V., Tommasi, A., Vauchez A., Demouchy S (2013). Déformation et teneurs en eau du manteau lithosphérique sous un rift actif, Nord Tanzanie. Poster. JDD Geoscience Montpellier. (Poster).
76. *Denis C., Alard, O, Demouchy S, (2013) Abundance of volatile elements in the uppermost mantle beneath the French Massif Central: the case of hydrogen. Poster. JDD Geoscience Montpellier. (Poster).
75. Mussi, A., Cordier P., Demouchy S, Tommasi A., (2013) Détermination des plans de glissement des dislocations [001] vis dans l'olivine par tomographie électronique. Colloque Plasticité 2013. 17-19 April 2013, Paris, France. (Talk).
74. Cordier, P., Demouchy, S., Mussi, A., and Tommasi, A. (2013) Deformation of olivine single crystals in tri-axial compression at 300 MPa and 800-1100°C. EGU, 7-12 April 2013, Vienna, Austria. (Talk).
73. *Baptiste, V., Vauchez, A., Tommasi, A., Demouchy, S. (2013). Deformation and water contents in mantle xenoliths from Tanzania. Poster. Crystal2Plate, 4th and Final meeting, Frejus, France. (Poster).
72. *Denis C.M.M., Demouchy S., Shaw C.J.S., (2013). Evidence of dehydration in xenoliths from Eifel . Poster. Crystal2Plate, 4th and Final meeting, Frejus, France. (Poster).
71. Burnard, P., Demouchy, S., and Arnaud, N., (2012), Talk, Noble gas storage and transport in the terrestrial mantle: the importance of grain boundaries. AGU Fall Meet. (Talk).
70. *Satsukawa, T., Michibayashi, K., Godard, M., and Demouchy, S. (2012). The uppermost mantle evolution during back-arc spreading: Microstructural and petrological characteristics of Ichinomegata peridotite xenoliths in the back-arc region of Japan Islands. AGU Fall Meet., (Poster).
69. Demouchy, S., Tommasi, A., and Cordier, P. (2012). Deformation of olivine single crystals under lithospheric conditions. AGU Fall Meet. MR11-2464 (Poster).
64. *Denis, C., Demouchy, S., Shaw, C.J.S. (2012). Evidence of dehydration in xenoliths from Eifel. Poster. Abs EMC2012-35. First EMC2012, Frankfurt, Germany. (Poster).
63. Demouchy, S., Tommasi, A., and Cordier, P. (2012). Deformation of olivine single crystals under lithospheric conditions. Abs EMC2012-36. First EMC2012, Frankfurt, Germany. (Talk).
61. Demouchy, S., Tommasi, A., and Cordier, P. (2012). Deformation of olivine single crystals in tri-axial compression at 300 MPa and 800-1100°C. Colloques Plasticité Metz, France. (Poster).
59. *Satsukawa, T., Michibayashi, K ., Godard, M., Demouchy, S., Ildefonse, B. (2011). Fabric and petrological characteristics of peridotite xenoliths from back-arc region of the Japan arc. AGU Fall Meet. Suppl., Abstract T43C-2320.
58. *Soustelle, V., Tommasi, A., Demouchy, S. (2011). Water contents and deformation in spinel peridotite xenolihts from the supra-subduction mantle (invited talk). AGU Fall Meet. Suppl., Abstract T24B-04.
57. *Chaufaud, J., Alard, O., Demouchy, S, Dautria, J-M and O'Reilly, S.Y., (2011). Water behaviour during mantle melt percolation-reaction: a case study from the Borée peridotite xenoliths (Massif Central, France). AGU Fall Meet. 2011 Suppl., Abstract DI21A-2061.

55. Bolfan-Casanova, N., Munoz, M., McCammon, C., Deloule, E., Férot, A., Demouchy, S, France, L., Andrault, D., Pascarelli, S. (2011) Ferric iron and water incorporation in wadsleyite under hydrous and oxidizing conditions. Goldschmidt Conference, Prague, Czech Republic.Min Mag, Min. Mag., 75(3): 547.
53 Demouchy, S., & Tommasi, A., (2011). Rheology of the Earth's uppermost lithosphere inferred from co-axial deformation experiments. Gordon Research Conference, Mt Holyoke, USA. (Poster).
52. Tommasi, A., Vauchez, A., Mainprice, D., Demouchy, S., Baptiste, V., Bodinier, J-L., Le roux, V., Soustelle, V. (2011) Deformation processes in the subcratonic mantle lithosphere. International conference on craton formation and destruction, Beijin, China. (Talk).
51. Demouchy, S. (2010). Diffusivity of water in the deep Earth: reports from the lab, rumors from Patagonia, & potential implications for electrical conductivity. Dublin Institut for Advanced Studies. Workshop on Continental Lithospheric and Asthenospheric anisotropy. Dublin, Ireland. (Talk).
50. Demouchy, S., Mainprice, D. Tommasi A., Couvy H., Frost D. J., Cordier, P., (2010) Forsterite to Wadsleyite Phase Transformation Under Stress: Evidence of Texture Variations Correlated to Water Content. Eos Trans. AGU, Fall Meet. Suppl., Abstract DI13A-1860. (Poster).
49. Costa Rodriguez, F., Dohmen, R., Demouchy, S.; (2010) Modeling the dehydrogenation of mantle olivine with implications for the water content of the Earth's upper mantle, and ascent rates of kimberlite and alkali basaltic magmas Eos Trans. AGU, Fall Meet. Suppl., Abstract V24C-06. (Invited talk).
48. *Soustelle V., Tommasi A., Demouchy S.. (2010). Seismic properties of the sub-arc mantle. Eos Trans. AGU, Fall Meet. Suppl., Abstract DI33C-06.
47. Demouchy S. (2010). Diffusion of hydrogen in olivine and spinel grain boundaries: an experimental approach. 7th Forum High pressure 2010, Biarritz, France. (Talk).
46. Demouchy S. (2010). Diffusion ionique à hautes pression et hautes températures dans les minéraux du manteau supérieur de la Terre: apport de la presse Paterson. Journée haute pression STEP 2010. Université Montpellier 2, Montpellier, France. (Talk).
45. Mainprice D., Demouchy S.. Tommasi A., Barou F., Frost D, Couvy H., and Cordier P. (2010). The Forsterite - Wadsleyite phase transformation under stress and consequences for the seismic properties of Earth's mantle transition zone. EMPG XIII, Toulouse, France (Poster).
44. Demouchy S. (2010). Rheology of olivine single crystals at Earth's uppermost mantle conditions. EMPG XIII, Toulouse, France. (Poster)
43. Demouchy S. (2010). Diffusion of hydrogen in olivine and spinel grain boundaries and implications for the survival of water-rich zones in Earth's mantle. EMPG XIII, Toulouse, France. (Talk).
42. *Soustelle V., Tommasi A., Demouchy S.., Ionov D. (2009). Deformation and fluid-rock interactions in supra-subduction mantle: Microstructures and water contents in peridotite xenoliths from the Avacha volcano, Kamchatka, 3th CNRS-FORSTERITE, Bonascre, France. (Poster).
39. *Soustelle V., Tommasi A., Demouchy S.., Ionov D. (2009) Deformation and fluid-rock interactions in supra-subduction mantle: Microstructures and water contents in peridotite xenoliths from the Avacha volcano, Kamchatka, 1rst Crystal2Plate meeting, la Grande Motte, (Talk).
37. *Soustelle V., Tommasi A., Demouchy S.., Ionov D. (2009) Deformation and reactive melt transport in the mantle lithosphere above a large-scale partial melting domain: the Ronda peridotite massif, Southern Spain. Deformation Rocks & Tectonics, Liverpool, United-Kingdom. (Poster).
36. *Soustelle V., Tommasi A., Demouchy S., Ionov D. (2009) Deformation and fluid-rock interactions in supra-subduction mantle: Microstructures and water contents in peridotite xenoliths from the Avacha volcano, Kamchatka. Deformation Rocks & Tectonics, Liverpool, United-Kingdom. (Talk).

35. *Soustelle V., Tommasi A., Demouchy S.., Ionov D. (2009) Deformation and fluid-rock interactions in supra-subduction mantle: Microstructures and water contents in peridotite xenoliths from the Avacha volcano, Kamchatka. (Talk & poster). EURISPET, Grenade, Espagne.
34. Demouchy S., (2009). Hydrogen diffusion in grain boundaries: an experimental approach. Goldschmidt conference, Davos, Swissland. (Poster).
33. *Vignon V., Gibert B., Demouchy S., and Vauchez, A (2009) Does static recrystallization occur in the continental lithosphere ? Insights from an experimental study. EGU, Vienna, Austria, Abs 5436.(Poster).
32. Demouchy S., (2008). "La presse de Paterson : un nouvel outils pour quantifier les propriétés physiques des minéraux du manteau terrestre." 6ième forum CNRS haute pression, Batz, France. (Poster.)
31. *Soustelle V., Tommasi A., Demouchy S., Ionov D. (2008) Deformation and fluid-rock interactions in peridotites xenoliths from the Avacha calc-alkaline volcano, South Kamchatka subduction zone. (Poster), 5th Lherzolite Orogenic Conference, Mt Shasta, California.
30. *Schneider S. E., Demouchy S., and Kohlstedt D. L., (2008) Flow laws describing deformation of the lithospheres of terrestrial planets based on experiments on single crystals of olivine at low temperature and high pressure. 39th LPSC, League City, TX, USA. (Poster.)
23. Demouchy S., Stern C., Jacobsen J.D., (2006) The dehydration of mantle xenoliths as a new tool to witness magma ascent. Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract VP53E-03. Talk
21. Demouchy S., (2006). Understanding the dehydration of mantle xenoliths, MSA Short course "Water in nominally anhydrous minerals, Verbania, Italy. (Talk).
20. Demouchy S., Jacobsen, S. D., Gaillard F., and Stern C.R. (2006). Diffusivity of Water in the Deep Earth: Reports from the Lab, highlights from Patagonia. BGI 20th anniversary – celebration workshop: Bayreuth University, Bayreuth, Germany (Poster).
15. Demouchy S., Mackwell S.J., and Kohlstedt D. L. (2005) AGU fall meeting: " Effect of Hydrogen on Mg-Fe Interdiffusion in Ferro-periclase". Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract MR41A-0902. (Poster).
14. Demouchy S., Mackwell S., Jacobsen, S. D., Gaillard F., and Stern C.R.: (2005) New Insights on the Water Storage in the Uppermost Mantle: Evidence of Dehydration in Peridotites. EUG, Vienna, Austria. (Poster).
12. [T] Demouchy S., Deloule E., Frost D. J., Keppler H. (2004) Effect of Temperature and Pressure on Water Solubility in Wadsleyite. "TMR Hydrospec" end-term meeting, Stockholm, Sweden. (Talk).
11. [T] Demouchy S., Deloule E., Frost D. J., Keppler H. (2004) Effect of Temperature and Pressure on Water Solubility in Wadsleyite. Goldschmidt conference, Copenhagen:.(Talk).
8. [T] Demouchy S., Gaillard F., Jacobsen S. Stern C.R. and Mackwell S., (2003) Water Diffusion in Olivine. Bayerisches Geoinstitut, Bayreuth, Germany. (Seminar).
7. [T] Demouchy S., Gaillard F., Stern C.R. and Mackwell S.: (2003) Water Diffusion as a Natural Process in Olivine Crystal from Garnet-Peridotite Xenoliths in Basalts. EUG-AGU-EGS join meeting, Nice, France. Geophys. Res. Abs, 5, 03216. (Talk).
6. [T] Demouchy S., Mackwell S. and Keppler H. (2003) Hydrogen Diffusion in synthetic Forsterite "TMR Hydrospec" mid-term meeting, Nice, France. (Talk).
5. [T] Demouchy S., and Mackwell S. (2002) Hydrogen Diffusion in Forsterite. Eos Trans. AGU, 82 (47), Fall Meet. Suppl., Abstract T21C-1108. (Poster).
4. [T] Demouchy S.,.and Mackwell S. (2002) Hydrogen Diffusion in synthetic Forsterite. 2nd "TMR Hydrospec" Meeting, Vienna, Austria. (Talk).
3. [T] Demouchy S., and Mackwell S. (2002) Water Diffusion in Natural Olivine and Synthetic Forsterite, EMPG IX, Zurich, Switzerland. J. Conf. Abs. 7,1, 27. (Talk).
2. [T] Demouchy S., Mackwell S. and Keppler H. (2002) Water Diffusion in Natural Olivine and Synthetic Forsterite. Bayerisches Geoinstitut, Bayreuth, Germany. (Seminar).
1. [T] Demouchy S., and Mackwell S. (2001) Water Diffusion in Mantle Olivine, EUG, Strasbourg, France. J. Conf. Abs. 6, 461. (Poster).