Curriculum Vitae: **Olivier Sulpis**

Postdoctoral researcher
Department of Earth Sciences, Utrecht University, Princetonlaan 8a, 3584 CB Utrecht, The Netherlands
o.j.t.sulpis@uu.nl • +33 6 25 44 11 55 (French mobile) +31 6 25 11 04 16 (Dutch mobile) • olivier.sulpis (Skype) • website: deep-c.xyz

Education

2015 – 2019 McGill University, Canada
Ph.D. Earth and Planetary Sciences
Dissertation: Calcium carbonate mineral dissolution kinetics at the sediment-water interface in an acidifying ocean. Advisor: Pr. Alfonso Mucci

2011 – 2014 ENS de Lyon and Université Lyon 1, France
BSc. Earth Sciences

Research positions

2019 – present Utrecht University, The Netherlands.
Postdoctoral researcher. Advisor: Prof. Jack Middelburg

2015 – 2019 McGill University, Canada.
Research assistant. Advisor: Prof. Alfonso Mucci

2018 – 2019 California Institute of Technology, USA.
Visiting student researcher. Advisor: Prof. Jess Adkins and Dr. Monica Martinez Wilhelmus

2015 Centre de Recherche et d'Enseignement de Géosciences de l'Environnement (CEREGE), France.
Research assistant. Advisors: Drs. Bruno Hamelin, Abel Guihou and Pierre Deschamps

2014 Laboratoire des Sciences du Climat et de l'Environnement (LSCE), France.
Research assistant. Advisors: Drs. Olivier Cattani and Amaelle Landais

2014 Ecole normale supérieure (ENS) de Lyon, France.
Research assistant. Advisor: Dr. Sylvain Pichat

Teaching positions

2015 – 2019 Earth and Planetary Sciences Department, McGill University, Canada
Teaching assistant: The Earth System [description] | Winter 2016, Winter 2019 ; Earth and Life History [description] | Fall 2018 ; Chemical Oceanography [description] | Winter 2018 ; Crystal Chemistry [description] | Fall 2017 ; Earth System Processes [description] | Winter 2017 ; Principles of Geochemistry [description] | Fall 2015, Fall 2016

2018 Atmospheric and Oceanic Sciences Department, McGill University, Canada
Guest instructor: Introduction to Oceanic Sciences [description] | Winter 2018

2017-2018 Teaching and Learning Services, McGill University, Canada
Student Life and Learning assistant: organized and run science communication workshops for graduate students, organized science communication competitions.

Publications

h-index = 2 / 33 citations

peer-reviewed

6. **Sulpis, O.**, Lauvset, S. K. & Hagens, M. Current estimates of K_1^* and K_2^* appear inconsistent with measured CO_2 system parameters in cold oceanic regions. *Ocean Science,* 16: 847-862. doi:10.5194/os-16-847-2020.

5. Boudreau, B. P., **Sulpis, O**. & Mucci, A. 2020. Control of $CaCO_3$ dissolution at the deep seafloor and its consequences. *Geochimica et Cosmochimica Acta*, 268: 90-106. doi:10.1016/j.gca.2019.09.037.
Blogs: OCB Science Highlights

4. **Sulpis, O.**, Dufour, C. O., Trossman, D. S., Fassbender, A. J., Arbic, B. K., Boudreau, B. P., Dunne, J. P. & Mucci, A. 2019. Reduced $CaCO_3$ flux to the seafloor and weaker bottom current speeds curtail benthic $CaCO_3$ dissolution over the 21st century. *Global Biogeochemical Cycles*, 33(12): 1654-1673. doi:10.1029/2019GB006230.
Blogs: Skeptical Science

3. **Sulpis, O**., Mucci, A., Boudreau, B. P., Barry, M. & Johnson, B. 2019. Controlling the thickness of the diffusive boundary layer above the sediment-water interface with a thermostatic rotating disk reactor. *Limnology and Oceanography: Methods*, 17 (4): 241-253. doi:10.1002/lom3.10309.

2. **Sulpis, O**., Boudreau, B. P., Mucci, A., Jenkins, C., Trossman, D. S., Arbic, B. K & Key, R. M. 2018. Current $CaCO_3$ dissolution at the seafloor caused by anthropogenic CO_2. *Proceedings of the National Academy of Science of the USA,* 115 (45): 11700-11705. doi:10.1073/pnas.1811488115.
Press: Smithsonian Mag | Vice - Motherboard | Popular Science | Gizmodo - Earther | The Weather Channel | NBC News | Care 2 | Frontiers in Ecology and the Environment | Daily Mail | Le Devoir | La Presse | ABC | 20 minutos | La Vanguardia | Sputnik International | The Syria Times | + ~170 press articles from 38 countries. **Blogs:** The Science Breaker | The YEARS Project | + 15 others. **Videos:** World Economic Forum | The Weather Channel | La Presse | Seeker.

1. **Sulpis, O**., Lix, C., Mucci, A. & Boudreau, B. P. 2017. Calcite dissolution kinetics at the sediment-water interface in natural seawater. *Marine Chemistry* **195**, 70-83, doi:10.1016/j.marchem.2017.06.005.

under review / revision

Sulpis, O., Mucci, A., White, D. Daoust, P. & Boudreau, B. P. Impact of environmental conditions and sediment properties on the dissolution kinetics of natural and synthetic calcites. *Geochimica et Cosmochimica Acta, under revision.*

datasets

Bakker, D. C. E., Lauvset, S. K., Wanninkhof, R., …, **Sulpis, O.**, … 2018. Surface Ocean CO_2 Atlas (SOCAT) V6. PANGAEA, doi:10.1594/PANGAEA.890974.

Sulpis, O., Boudreau, B. P., Mucci, A., Jenkins, C., Trossman, D. S., Arbic, B. K & Key, R. M. 2018. Current calcite ($CaCO_3$) dissolution at the seafloor caused by anthropogenic CO2. (NCEI Accession 0176672). Version 1.1. *NOAA National Centers for Environmental Information Dataset*. doi: 10.25921/kbqy-4v05

Oral presentations

***** invited

conferences and *seminars*

2020 Current estimates of carbonic acid dissociation constants appear inconsistent with measured CO_2 system parameters in cold oceanic regions. Oral presentation at the **NAC Congress**. Utrecht, Netherlands *<cancelled due to coronavirus crisis>*

* **2020** The journey of biogenic carbonate particles from the surface ocean to the seafloor. Invited oral presentation at the **NESSC days**. Utrecht, Netherlands.

2020 Carbonating the ocean: a threat to marine life? Oral presentation at the *Symposium Oceans of the Future*. Utrecht, Netherlands.

* *2019* The consequences of ocean acidification and changing bottom currents at the seafloor. Invited oral presentation at the *Royal Netherlands Institute for Sea Research*, Texel, Netherlands.

* **2019** Carbonate compensation in the Anthropocene. Invited oral presentation at the **Goldschmidt conference**, Barcelona, Spain.

* **2019** Current $CaCO_3$ dissolution at the seafloor caused by anthropogenic CO_2. Keynote presentation at **OCB Summer Workshop**, Woods Hole Oceanographic Institution, Woods Hole MA, USA.

* *2018* Seafloor $CaCO_3$ dissolution in the Anthropocene: insights from models and laboratory experiments. Invited oral presentation for the AOPE seminar series, *Woods Hole Oceanographic Institution*, Woods Hole MA, USA.

2018 Controls on the dissolution rates of natural and synthetic calcites under seafloor-like conditions. Oral presentation at the **AGU Fall meeting**, Washington DC, USA.

2018 Bottom-Water Acidification and $CaCO_3$ Dissolution at the Seafloor Caused by Anthropogenic CO_2. Oral presentation at the **Goldschmidt conference**, Boston MA, USA.

* **2017** Transport-Controlled, Linear Calcite Dissolution Kinetics at the Sediment-Seawater Interface. Invited oral presentation at the **Goldschmidt conference**, Paris, France.

relevant informal presentations

2019 Calcite dissolution kinetics at the sediment-water interface in an acidifying ocean. Presentation in front of the geochemistry group of the Department of Earth Sciences, *Utrecht University*, Utrecht, Netherlands.

2018 Mechanisms and quantification of seafloor $CaCO_3$ dissolution in the Anthropocene. Presentation in front of the marine biogeochemistry group of the Division of Geological and Planetary Sciences, *California Institute of Technology*, Pasadena CA, USA.

2016 Arctic Survival in the North-West Passage. Oral presentation for the Oleg student seminars series at the Earth and Planetary Sciences Department, *McGill University*, Montreal QC, Canada.

2016 Ocean acidification and the carbonate system. Oral presentation for the *Schools on Board* program, *CCGS Amundsen ice-breaker*, Canadian Arctic.

Competitive funding and honors

2020 NWO Open Competition Domain Science – XS Grant – PI: 50,000 €
Funded project: "Calcium carbonate dissolution at the seafloor: physics, chemistry or biology?"

2020 UU-NIOZ funds for hiring a 2-month student intern – co-PI with Matthew Humphreys: 4,500 €

2019 McGill Doctoral Internship Program: 1,000 CA$

2018 McGill Graduate Research Enhancement and Travel Award: 500 CA$

2018 Alexander A. McGregor Fellowship, rewarding outstanding students: 14,700 CA$

2018 McGill International Graduate Mobility Award: 5,000 CA$

2017 3 Minute Thesis 1st prize: 400 CA$. **Press:** Radio-Canada | CHOQ.ca | McGill Reporter | ACFAS

2017 McGill J. B. Lynch Fellowship, rewarding outstanding students: 15,000 CA$

2016 Best Departmental Teaching Assistant: 1,000 CA$

2016 McGill J. B. Lynch Fellowship, rewarding outstanding students: 2,000 CA$

2016 McGill Graduate Research Enhancement and Travel Award: 650 CA$

2016 CSPG Regional Graduate Student Scholarship, Atlantic and Quebec Region: 2,500 CA$

Sea going experience

78 days at sea

2019 CCGS Amundsen icebreaker / 15 days / St Lawrence Estuary and Gulf
My role: Spectrophotometric pH analysis and total alkalinity titration, seawater sampling for $\delta^{13}C$ and $\delta^{18}O$, measurement of surface pCO_2.
Press: [CAN] Le Devoir 1 | Le Devoir 2 | Le Devoir 3 [FRA] Le Monde

2018 RV Coriolis II / 12 days / St Lawrence Gulf and Estuary
My role: Spectrophotometric silica concentration and pH analysis, seawater sampling for total alkalinity, DIC, phosphate concentration, $\delta^{13}C$ and $\delta^{18}O$. Sampling of sediment porewater for multiple box cores.

2017 CCGS Amundsen icebreaker / 6 days / Canadian Arctic, St Lawrence Estuary
My role: Monitoring an automatic underway pCO_2 system for surface waters, spectrophotometric pH analysis, seawater sampling for total alkalinity $\delta^{13}C$ and $\delta^{18}O$.

2017 RV Coriolis II / 10 days / St Lawrence Gulf and Estuary
My role: Spectrophotometric silica concentration and pH analysis, seawater sampling for total alkalinity, DIC, phosphate concentration, $\delta^{13}C$ and $\delta^{18}O$. Sampling of sediment porewater for multiple box cores.

2016 CCGS Amundsen icebreaker / 22 days / Canadian Arctic
My role: Spectrophotometric pH analysis and total alkalinity titration, seawater sampling for $\delta^{13}C$ and $\delta^{18}O$.

2016 RV Coriolis II / 12 days / St Lawrence Gulf and Estuary
My role: Spectrophotometric silica concentration and pH analysis, seawater sampling for total alkalinity, DIC, phosphate concentration, $\delta^{13}C$ et $\delta^{18}O$. Sampling of sediment porewater for multiple box cores.
Press: Québec Science

2014 RV Tethys II / 1 days / Mediterranean Sea
My role: Seismic refraction profiles

Workshops and training

2020 Molecular Organic Biogeochemistry. NIOZ, The Netherlands. 5 days course.

2020 Ocean modelling: VEROS - the Tesla of climate models. Utrecht University. 1 day workshop.

2019 COMSOL Multiphysics Introduction. Utrecht University. 1 day workshop.

2019 Ocean Carbon & Biogeochemistry Summer Workshop. [see here] WHOI, USA. 4 days.

2018 Transferable skills and identity as a leader. McGill University. 1 day workshop.

2017 Mineral-fluid reactions: from rocks to atoms. [see here] Paris, France. 2 days workshop.

2015 X-Ray Diffraction training. McGill University, Canada.

2015 Graduate teaching workshop. McGill University. 1 day workshop.

2015 Thermal Ionization Mass Spectrometry training. CEREGE, France.

2014 Picarro Cavity Ringdown Spectroscopy training. LSCE, France.

2014 Ion-exchange resin procedures training. ENS de Lyon, France.

Service

outreach

2019 Podcast in French about ocean acidification in the radio emission L'œuf ou la poule

2018 McGill Let's Talk Science: run classroom activities in primary schools

referee

Geochimica et Cosmochimica Acta / Biogeosciences / Marine Chemistry / Continental Shelf Research / Water / Journal of Colloid and Interface Science / Desalination and Water Treatment / IPCC AR6 / Agence nationale de la recherce

community service

2018 Quality controller for the Surface Ocean CO_2 Atlas (SOCAT)

university service

2020 UU-NIOZ early career scientist symposium: co-organizer *<cancelled due to coronavirus>*

2019 Utrecht University Geochemistry Group Seminar: co-organizer

2019 Congrès des étudiants du GEOTOP: co-organizer

2017 McGill Earth and Planetary Science Research Symposium: co-organizer