# CURRICULUM VITAE
# GUILLAUME SIRON

## Information

Born 5th January 1989 in Belfort (France)
Current address: Mura ddi Porta Galliera, 1, 40126, Bologna, Italy
Languages: French (native), English (fluent), German, Italian (good notions)
e-mail: guillaume.siron@unibo.it
OrcID: 0000-0001-6646-7648

## Education

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| Feb. 2013 – 12th May 2017 | PhD at the University of Lausanne under the supervision of Prof. Lukas Baumgartner, entitled: *"Fluorine, chlorine and OH content in biotite during contact metamorphism"* |
| June 2012 | Master in geology with honors at the University of Franche-Comté |
| June 2010 | Bachelor in geology with honors at the University of Franche-Comté |

## Professional experiences

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| Sept. 2021 – current | Post-Doc at the DeepCarbon Laboratory at the University of Bologna (Italy), advisor: Prof. Alberto Vitale-Brovaronne. |
| July 2020 – June 2021 | Post-Doc at the WiscSIMS Laboratory at the University of Wisconsin-Madison (USA), advisor: Dr. Chloe Bonamici. |
| Oct. 2018 – June 2020 | Post-Doc at the WiscSIMS Laboratory at the University of Wisconsin-Madison (USA), advisor: Dr. Noriko T. Kita. |
| June – Sept. 2018 | Post-Doc at the SwissSIMS Laboratory at the University of Lausanne, advisor: Prof. Lukas P. Baumgartner |
| Aug. – Dec. 2017 | Substitute Lab manager of the SwissSIMS Laboratory at the University of Lausanne |

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| June – July 2017 | Post-Doc at the SwissSIMS Laboratory at the University of Lausanne, advisor: Prof. Lukas P. Baumgartner |
| Feb. 2013 – May 2017 | PhD student at the University of Lausanne under the supervision of Prof. Lukas P. Baumgartner |

## Scientific background and Lab experience

Analytical geochemistry: very strong background in Secondary Ion Mass Spectrometry (SIMS) and strong background for Electron Microprobe (EMP), Secondary Electron Microscopy (SEM) and Focus Ion Beam (FIB-SEM).

- Optical interferometer for topography measurements
- Optical microscopy

## Skills

- Python (Numpy, Matplotlib, Pandas, Scipy, PyQt5, Scikit-learn), Matlab and Fortran programming
- Perple_X, Theriak/Domino, EQ3/6, SUPCRT for thermodynamic modelling
- Microsoft word, excel and powerpoint
- Adobe Illustrator, Photoshop, Indesign
- Statistics (frequentist and bayesian) and linear algebra

## Teaching experience

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| Master Geology | Responsible for the practical part of class “Applied Petrology” (2015, 2016 and 2017) at the University of Bologna (Italy). |
| Master Geology | Assistant for the practical part of class “Fluids in the Earth Crust” (2015, 2016 and 2017) at the University of Lausanne (Switzerland). |
| Bachelor Geology | Assistant for the practical part of class “Petrology” 2$^{nd}$ and 3$^{rd}$ year (2014) at the University of Lausanne (Switzerland). |
| Bachelor Geology | Assistant for petrology for “field mapping” for 3$^{rd}$ year (2013-2016) at the University of Lausanne (Switzerland). |
| Bachelor Geology | Assistant for petrology for “field mapping” for 3$^{rd}$ year (2013-2016) at the University of Franche-Comté (France) |

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| Bachelor Geology | Assistant for the practical part of class “Introduction to Earth Sciences” 1st year (2015) at the University of Lausanne (Switzerland). |
| Bachelor Geology | Assistant and organizer of EPFL 1st year of bachelor Introduction to Earth Sciences exercises, (2013-2016) at the Ecole Polytechnique Fédérale de Lausanne (Switzerland). |

## Publications

**Siron G.**, Kita N.T., Kimura M., Fukuda K. (2022) High precision 26Al-26Mg chronology of chondrules in unequilibrated ordinary chondrites: evidence for restricted formation ages. *Geochimica et Cosmochimica Acta*.

Fukuda K., Tenner T. J., Kimura M., Tomioka N., **Siron G.**, Ushikubo T., Chaumard N., Hertwig A. T., Kita N. T. (2022) A temporal shift of chondrule generation from the inner to outer Solar System inferred from oxygen isotopes and Al-Mg chronology of chondrules from primitive CM and CO chondrites. *Geochimica et Cosmochimica Acta, 322, 184-226.*

Zhang M., Defouilloy C., Joswiak D.J., Brownlee D.E., Nakashima D., **Siron G.**, Kitajima K., Kita N.T. (2021) Oxygen isotope systematics of crystalline silicates in a giant cluster IDP: A genetic link to Wild 2 particles and primitive chondrite chondrules. *Earth and Planetary Sciences Letters*, 564.

Weisberg M. K., Kita N. T., Fukuda K., **Siron G.**, Ebel D. S. (2021) Micro-distribution of Oxygen Isotopes in Unequilibrated Enstatite Chondrites. *Geochimica et Cosmochimica Acta*, 300, 279–295.

**Siron G.**, Bodner R., Baumgartner L., Putlitz B., Vennemann T. (2021) Channelized igneous fluid infiltration documented in the Torres del Paine contact aureole. *American Mineralogist*.

**Siron G.**, Kita N.T., Kimura M., Fukuda K. (2021) New constraints from $^{26}Al/^{26}Mg$ chronology of anorthite bearing chondrules in unequilibrated ordinary chondrites. *Geochimica et Cosmochimica Acta, 293, 103-126.*

**Siron G.**, Goncalves P., Marquer D., Trap P., Paquette J-L (2020) Contribution of magmatism, partial melting buffering and localized crustal thinning on the late-variscan thermal structure of the Agly massif (French Pyrenees). Journal of Metamorphic Geology.

Vanardois J., Trap P., Goncalves P., Marquer D., Gremmel J., **Siron G.**, Baudin T. (2020) Kinematics, Deformation partitioning and late Variscan agmatism in the Agly massif, Eastern Pyrénées, 191, 15.

Luisier C., Schmalholz S.M., Baumgartner L., **Siron G.**, Vennemann T. (2019) Metamorphic pressure variation in coherent Alpine nappe challenges lithostatic paradigm. Nature communications.

Luisier C., Baumgartner L., **Siron G.**, Vennemann T., Robyr M. (2019) $H_2O$ content measurement in phengite by Secondary Ion Mass Spectrometry: new set of reference materials. Geostandards and Geoanalytical Research.

Lafay R., Baumgartner L., Putlitz B., **Siron G.** (2019) Oxygen isotope disequilibrium during serpentinite dehydration. Terra Nova, 31, 94–101.

**Siron G.**, Baumgartner L., Bouvier A-S. (2018) Significance of OH, F and Cl content in biotite during metamorphism of the Western Adamello contact aureole. Contribution to Mineralogy and Petrology, 173:63.

**Siron G.**, Baumgartner L., Bouvier A-S., Vennemann T. (2018) Accurate measurements of $H_2O$, F and Cl content in biotite using Secondary Ion Mass Spectrometry. Geostandards and Geoanalytical Research. 42, 523–537.

**Siron G.**, Baumgartner L., Bouvier A-S., Putlitz B., Vennemann T. (2017) Biotite Reference Materials for Secondary Ion Mass Spectrometry $^{18}O/^{16}O$ Measurements. Geostandards and Geoanalytical Research. 41, 243–253.

## Softwares

Data processing python standalone application for SIMS analyses:

https://github.com/G-Siron/ProceSIMS

Python standalone application to calibrate matrix effect of complex minerals for SIMS analyses:

https://github.com/G-Siron/MatriSIMS

Python standalone application to perform 2 samples 2 dimensional Kolmogorov-Smirnov test:

https://github.com/G-Siron/KS2d2

Personal fork of the Fast Grain Boundary software:

https://github.com/G-Siron/FastGrainBoundary-DiffusionSolver

## Active membership in scientific societies

Membership in the Mineralogical Society of America

## Organization of workshops

Organizer of the workshop for the Doctoral Program in Mineral Sciences (DPMS) entitled:

"Thermodynamic modelling of Fluid-rock equilibria", held by James Connolly (ETHz) at the University of Lausanne the 21$^{st}$-22$^{nd}$ of March 2016. Budget: 3500 CHF.

# Communications at scientific meetings

**Siron G.**, Kita N.T., Kimura M., Fukuda K. (2021) High Precision Al-Mg Chronology of Chondrules in unequilibrated Ordinary Chondrites. LPSC annual meeting, Houston, United States.

**Siron G.**, Kita N.T., Fukuda K. (2021) Secondary Ion Mass Spectrometry for Mg Isotope Ratio Measurements: Application to Meteoritic Chondrules and Cometary Particles. Microsocopy and Microanalysis 26.

**Siron G.**, Kita N.T., Fukuda K. (2020) Improved Precision for Al-Mg Chronology of Chondrules having mesostasis with mediuym Mg Content (0.5-1 wt%). LPSC annual meeting, Houston, United States.

**Siron G.**, Kita N.T., Kimura M., Fukuda K. (2020) Al-Mg Chronology of Anorthite-Bearing Chondrules from Unequilibrated Ordinary Chondrites: Clues on Short Duration of Chondrules Formation. LPSC annual meeting, Houston, United States.

Kita N.T., **Siron G.**, Kimura M. (2019) Petrographic examination of unequilibrated ordinary chondrites with low petrologic subtypes. Meteoritical Society annual meeting, Sapporo, Japan.

Alpert S.P., Ebel D.S., Weisberg M.K., Kita N.T., **Siron G.**, Fukuda K. (2019) The petrology of opaque assemblages in unequilibrated ordinary chondrites. Meteoritical Society annual meeting, Sapporo, Japan.

Weisberg M.K., Kita N.T., Fukuda K., **Siron G.**, Ebel D.S. (2019) Microdistribution of oxygen isotopes in unequilibrated enstatite chondrites. LPSC annual meeting, Houston, United States.

Lafay L., Baumgartner L.P., Putlitz B., **Siron G**. (2018) Evidence for oxygen isotope disequilibrium during serpentinite breakdown. EGU annual meeting, Vienna, Austria.

Luisier C., Baumgartner L.P., Schmalholz S.M., **Siron G.**, Vennemann V. (2018) Outcrop-scale pressure variations in the Monte Rosa Nappe, Western Alps, challenge the lithostatic pressure paradigm. EGU annual meeting, Vienna, Austria.

Bovay T., Rubatto D., Lanari P., Baumgartner L.P., **Siron G.** (2018) Tracking fluid-rock interactions the subducted slab: insight from the Theodul Gletscher Unit (Western Alps, Switzerland). EGU annual meeting, Vienna, Austria.

Dutrow B., Marger K., Putlitz B., Henry D., Baumgartner L.P., **Siron G.**, Bouvier A-S. (2017) In-situ oxygen isotope study of tourmaline and quartz: insights into the prograde temperature history. GSA annual meeting, Seattle, United States.

Moeller A., Premo A., Baumgartner L.P., **Siron G.**, Kooijman E., Kelly N.M. (2017) Paleoproterozoic crustal growth in the central US: Hf and oxygen isotope evidence from magmatic zircon in the Yavapai province of North-central Colorado. GSA annual meeting, Seattle, United States.

**Siron G.**, Baumgartner L.P., Bouvier A-S., Putlitz B. (2017) Chlorine content in Biotite as Tracer of Fluid-Rock Interaction during Contact Metamorphism. Goldschmidt annual meeting, Paris, France.

Luisier C., Baumgartner L.P., Bouvier A-S., **Siron G.**, Vaughan-Hammon J., Schmalholz S.M. (2017) Importance of Relative Water Fugacity Estimates in Metagranites and White Schists from SIMS Measurements of Water in Phengite. Goldschmidt annual meeting, Paris, France.

Baumgartner L.P., Bégué F., **Siron G.**, Luisier C., Marger K., Bouvier A-S. (2017) Using Secondary Ion Mass Spectrometry to Decipher Fluid-Rock Interaction. Goldschmidt annual meeting, Paris, France.

**Siron G.**, Baumgartner L.P., Bouvier A-S., Vennemann T. (2016) Water content of biotite as monitor of change in water activity. GSA annual meeting, Denver, United States.

**Siron G.**, Bodner R., Baumgartner L.P., Putlitz B., Vennemann, T., Müntener O. (2016) Limited fluid flow in the Torres del Paine contact aureole (Patagonia, Chile). GSA annual meeting, Denver, United States.

**Siron G.**, Baumgartner L.P., Bouvier A-S., Vennemann T. (2016) Decrease in water activity due to fluid absent partial melting monitored with water content in biotite in the Western Adamello contact aureole (Italy). EGU annual meeting, Vienna, Austria.

**Siron G.**, Baumgartner L.P., Bouvier A-S., Vennemann T. (2016) Water in biotite, a monitor of water activity during metamorphism? Invited talk at the PhD meeting of the Institut de Physique du Globe de Paris (IPGP) in Paris.

**Siron G.**, Baumgartner L.P., Bodner R. (2015) What does chlorine content in biottie say about metamorphic fluids: Case studies from the Torres del Paine and Western Adamello contact aureoles. Swiss Geosciences Meeting, Basel, Switzerland.

**Siron G.**, Baumgartner L.P., Bodner R. (2015) Chlorine content in biotite of the Torres del Paine and Western Adamello contact aureoles: a prograde or retrograde signal? GSA annual meeting, Baltimore, United States.

**Siron G.**, Baumgartner L.P., Bouvier A-S., Putlitz B. (2014) SIMS analysis of minerals with solid solution. Swiss Geosciences Meeting, Freiburg, Switzerland.

**Siron G.**, Baumgartner L.P., Bodner R., Putlitz B., Müntener O. (2013) High chloride concentration in biotites of host rocks documents infiltration of fluids exsolved from the Torres del Paine granites. Swiss Geosciences Meeting, Lausanne, Switzerland.

**Siron G.**, Baumgartner L.P., Bouvier A-S. (2013) Developement of $\delta^{18}O$ and $\delta\ ^{37}Cl$ SIMS analysis of biotites. Swiss Geosciences Meeting, Lausanne, Switzerland.

**Siron G.**, Goncalves P. Marquer D. (2012) The origin of high geothermal gradient: post-orogenic extension or large intrusion in the middle crust? A case study from the Agly Massif, French Pyrenees. Variscan2012, Sassari, Italy.