

# Juliette ORTET

## PhD student, CESBIO - UQTR

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🌐 <https://jortet.github.io/>

### Professional experiences

- Sept. 2020 **PhD Student in environmental science**  
to April 2025
- Co-direction : Alexandre Roy (ReMoTe-Nord laboratory, Université du Québec à Trois-Rivières, Québec, Canada) and Arnaud Mialon (Centre d'Etudes Spatiales de la Biosphère (CESBIO), Université de Toulouse III Paul Sabatier, France)
  - Title: "Observations of soil surface temperatures over the whole Arctic permafrost area using remote sensing"
  - Radiative transfer model (L-MEB, 2-Steram, MEMLS) – Inverse modeling
  - Soil Moisture and Ocean Salinity (SMOS) – Arctic area – Soil moisture and temperature
  - Python – Linux – QGIS – Matlab – R
  - Fieldworks at Cambridge Bay (Nunavut, Canada) in 2022 and 2023
- Oct. 2019 **Design and development engineer, Magellium**, Toulouse, France  
to July 2020
- IDL programming for satellite imagery processing (Overland software)
  - Project manager

### Education

- 2018 – 2019 **Master Degree in Physical Methods for Remote Sensing**, *Institut de Physique du Globe de Paris (IPGP)*, Paris, France
- 2016 – 2019 **Engineering Master Degree in Geomatics**, *Ecole Nationale des Sciences Géographiques*, Paris, France  
*Internships at the European Southern Observatory (ESO, APEX/ALMA), in Munich (Germany) and Santiago (Chile), supervised by Carlos de Breuck and Juan-Pablo Pérez-Beaupuits*
- "A study of the influence of the historical snow accumulation and wind effects on the extended Chajnantor plateau" (4 months)
  - "Improving atmospheric models and short-term forecasting capability of the water vapour above the Chajnantor plateau" (5 months)
- 2014 – 2016 **Two-year preparatory courses for a competitive examination to enter Engineering Schools (Bachelor Level)**, *Lycée Jean Rostand*, Strasbourg, France  
*Specialized in Earth Sciences, Biology, Mathematics, Chemistry and Physics*

### Teaching

- 2020 - 2022 **Ecole Nationale des Sciences Géographiques(ENSG)**, Paris, France
- Lectures & practicals at bachelor level (L3) (6h/y): *Introduction to satellite imagery*
  - Lectures & practicals at bachelor level (L3) (15h/y): *The image format*
- 2022 **Ecole d'ingénieurs de Purpan**, Toulouse, France
- Practicals at bachelor level (L1) (7.5h/y): Mathematics
  - Practicals at bachelor level (L1) (27h/y): R programming for physics

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## Communication

- March 2024 **Journées Internationales des Femmes et Filles de Sciences, JIFFS**, Villeneuve Tolosane, France
- March 2023 **Event "Rencontre Exploreur"**, *Festival Cultive ta Science*, Castelnaud-Montratier, France
- Jan. 2023 **Event "Rencontres Declics"**, *Dialogues Entre Chercheurs et Lycéens pour les Intéresser à la Construction des Savoirs*, Lavaur, France
- Nov. 2022 **APECS France Polar week**, *Association of Polar Early Career Scientists*, Online, France
- 2017 - 2021 **ENSG representative**, *Forum G2E (Géologie, Eau et Environnement)*, Paris, France

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## Collaborations

- Université de Trois Rivières, Québec, Canada (Alex Gélinas, Azza Gorraab)
- Université de Sherbrooke, Québec, Canada (Alain Royer)
- Gamma-WSL, Zurich, Swiss (Mike Schwank)
- MétéoSuisse, Zurich, Swiss (Simone Bircher)
- Finnish Meteorological Institute, Helsinki, Finland (Kimmo Rautiainen, Manu Holmberg)

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## Publications

### Article

**Juliette Ortet**, Arnaud Mialon, Alain Royer, Mike Schwank, Kimmo Rautiainen, Manu Holmberg, Simone Bircher-Adrot, Andreas Colliander, Yann Kerr & Alexandre Roy (in preparation) Retrieving frozen ground temperature under the snowpack in Arctic permafrost area, *The Cryosphere*

**Juliette Ortet**, Arnaud Mialon, Yann Kerr, Alain Royer, Aaron Berg, Julia Boike, Elyn Humphreys, François Gibon, Philippe Richaume, Simone Bircher-Adrot, Azza Gorraab & Alexandre Roy (2024) Evaluating soil moisture retrieval in Arctic and sub-Arctic environments using passive microwave satellite data, *International Journal of Digital Earth*, 17:1, 2385079, DOI: 10.1080/17538947.2024.2385079

Azza Gorraab, Oliver Sonnentag, Arnaud Mialon, Chelene Hanes, **Juliette Ortet**, Aaron Berg, Alexandre Roy (under review) Assessment of L-band Passive Microwave soil moisture retrievals in the North American Boreal biome, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*.

Roxanne Giguère-Tremblay, Arthur de Grandpré, Estéban Hamel Jomphe1, Mathieu Michaud, Hesam Salmabadi, David de Courville, Lucas Deschamps, Alex Gélinas, **Juliette Ortet**, Elisa Walfish, Julie Ruiz, Philippe Brodeur, Raphaël Proulx, Charles Martin (under review) Portrait évolutif d'un écosystème en changement : le lac Saint-Pierre

### Presentation

**Ortet, J.**, Mialon, A., Royer, A. and Roy, A., Soil temperature retrieval below the snowpack in the Arctic permafrost area using passive microwave satellite remote sensing. *SMAPVEX Workshop*, May 7-9, 2024

**Ortet, J.**, Mialon A., Roy, A., Kerr, Y., Royer, A., Bircher-Adrot, S. and Schwank, M., Monitoring surface soil temperature in the Arctic permafrost areas in winter using passive microwave satellite remote sensing. *European Conference on Permafrost*, 2023

**Ortet, J.**, Roy, A., Schwank, M., Royer, A., Bircher, S., Kerr, Y. and Mialon, A., Monitoring the surface soil moisture and temperature of the Arctic permafrost using passive microwave satellite remote sensing. *Journées Jeunes Chercheurs du CNES 2022*, 2022 – **Best presentation award**

## **Poster**

**Juliette Ortet**, Arnaud Mialon, Alain Royer, Mike Schwank, Kimmo Rautiainen, Manu Holmberg, Simone Bircher-Adrot, Andreas Colliander, Yann Kerr & Alexandre Roy, Poster : Retrieving the soil surface temperature under the snowpack in the Arctic permafrost area from SMOS brightness temperatures. *SMOS Science Conference & 15 Year Anniversary*, 2024

**Ortet, J.**, Mialon, A., Royer, A., Bircher, S., Kerr, Y. and Roy, A., Poster : Mesure de l'humidité du sol en zone de pergélisol arctique par télédétection satellite micro-ondes. *Institut Nordique du Québec*, 2023

**Ortet, J.**, Mialon, A., Royer, A., Bircher, S., Kerr, Y. and Roy, A., Poster : Suivi des humidités et températures du sol en zone de pergélisol arctique par télédétection satellite micro-ondes. *18ème Journées Scientifiques du Comité National Français des Recherches Arctiques et Antarctiques*, 2022 – **Best poster award**

**Ortet, J.**, Mialon, A., Royer, A., Bircher, S., Kerr, Y. and Roy, A., Poster : Suivi des humidités et températures du sol en zone de pergélisol arctique par télédétection satellite micro-ondes. *Colloque du Centre d'Etudes Nordiques 2022*, 2022