

**Contact
Information**

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Work experience

05.2016 - present

Risk Management Solutions, London, UK*Lead modeller (12/2018 - present)**Senior modeller (12/2017 - 11/2018)**Modeller (05/2016 - 11/2017)*

- Investigating flood/wind cross-peril correlation in Europe.
- Collaborating on North America winter storm hazard modelling.
- Developed a stochastic set of wind hazard for European windstorms (dynamical modelling, spatial downscaling, and hazard calibration).
- Modelled drought hazard for the financial sector.

01.2014 - 03.2016

ETH, Zürich, Switzerland*Postdoctoral research associate in climate dynamics*

- Investigated novel approaches to computing climate statistics.
- Conducted fundamental research in atmospheric dynamics
- Updated a high-performance atmospheric general circulation model.

12.2011 - 12.2013

California Institute of Technology, Pasadena, California, USA**Brown University**, Providence, Rhode Island, USA*Joint postdoctoral position in climate dynamics and theoretical physics*

Relocation of the research group from Caltech to ETH Zürich in 2013.

09.2006 - 12.2011

McGill University, Montreal, Quebec, Canada*Graduate research position in atmospheric sciences*

- Used statistical approaches to understand chemical reactions in chaotic flows.
- Developed a code to compute chemical reactions in turbulent flows.

04.2005 - 07.2005

Ouranos and UQAM, Montreal, Quebec, Canada*Internship*

- Developed a code to process large meteorological data sets with an artificial neurons network in order to determine modes of variability of the Arctic climate.

Leadership

2016 - present

Member of the board, *Climanosco*, Swiss non-profit association to make state-of-the-art climate science free and accessible to everyone.

06.2012 - 03.2015

Lead co-organiser of the workshop *Theoretical Advances in Planetary Flows and Climate Dynamics* (Les Houches, France, March 1-6 2015). Initiated the project, designed the scientific program, and led the practical organisation.

09.2006 - 06.2011

Assisted in teaching 8 undergraduate or graduate courses in geophysical fluid dynamics, turbulence, climate dynamics and meteorology. **Co-supervised** research projects.

06.2006 - 05.2007

President of the atmospheric and oceanic sciences graduate students society at McGill University. Organised events for the student community, represented the student body before the faculty, helped new students to relocate in Montreal.

Skills

Computer: Proficient in Linux, R, Matlab, Fortran, and Latex. Familiar with high-performance computing and large data sets management. Limited experience with Python and Objective-C.

Advanced knowledge of **climate and weather numerical models** (e.g. CAM, GFDL, WRF). Familiar with reanalysis products and climate data sets.

Languages: French (native), English (full professional proficiency), Spanish (elementary proficiency), German (elementary proficiency).

Certifications: RMS CCRA[®] (Certified Catastroph Risk Analyst).

Education

McGill University, Montréal, Canada

02.2007 - 11.2011

Doctor of Philosophy, *Atmospheric and Oceanic Sciences*

"Bimolecular Chemical Reaction in a Two-Dimensional Navier-Stokes Flow"

Thesis graded respectively in the top 10% and top 25% by the two examiners.

09.2005 - 01.2007

Master of Science, *Atmospheric and Oceanic Sciences*

Transfer to PhD program in 2007 (GPA 3.8/4.0)

Geophysical fluid dynamics, ocean dynamics, turbulence, climate dynamics, synoptic meteorology, mathematical statistics.

Ecole Polytechnique, Palaiseau, France

09.2004 - 06.2005

Master of Science & "Diplôme d'ingénieur de l'Ecole Polytechnique"

Majors in fluid mechanics and Earth sciences.

09.2002 - 08.2004

Bachelor of Science

Mathematics, applied mathematics, physics, mechanics, computer sciences.

Publications

L. Novak, T. Schneider, and F. Ait-Chaalal, 2020: **Midwinter suppression of storm tracks in an idealized zonally symmetric setting**, *Journal of the Atmospheric Sciences*, **77**, 297-313.

F. Ait-Chaalal, T. Schneider, B. Meyer and JB. Marston, 2016: **Cumulant expansions for atmospheric flows**, *New Journal of Physics*, **18**, 025019.

F. Ait-Chaalal and T. Schneider, 2015: **Why eddy momentum fluxes are concentrated in the upper troposphere**, *Journal of the Atmospheric Sciences*, **72**, 2744-2761.

F. Ait-Chaalal, M.S. Bourqui and P. Bartello, 2012: **Fast chemical reaction in two-dimensional Navier-Stokes flow: initial regime.**, *Physical Review E*, **85**, 046306.

Miscellaneous

- Visiting researcher at the Aspen Center for Physics (07.2012), and at the Kavli Institute for Theoretical Physics (04.2014 – 05.2014).

Interests

- Sports (long-distance and trail running, trekking, climbing, ski touring, mountaineering).
- Photography (nature and urban landscapes, street photography, architecture, travels).
📷: [instagram/fridoou](https://www.instagram.com/fridoou).
- Interests in history, international relations, and geopolitics.