

Postdoctoral fellow offer at LOCEAN/IPSL on the global impacts of climate variations in the Arctic

A postdoctoral position is available at LOCEAN/IPSL to work on the influence of the Arctic Ocean on weather and global climate. The Arctic has undergone remarkable changes in recent decades, with a faster surface warming than at other latitudes (the Arctic amplification) and a large decline of the sea-ice extent and thickness. The linkages between these changes, the Northern Hemisphere climate, and the observed increase in extreme events over northern continents are much debated. Some authors argue that the jet stream is becoming weaker, with larger meanders, as a response to the Arctic warming, therefore producing more persistent extreme weather during winter, while others find no significant linkage. In addition, many studies suggest that the interannual variability of Arctic sea ice extent has a significant influence on the storm tracks and on the Arctic Oscillation, thus likely affecting the occurrence of extreme events. However, the observational period is short and the mid-latitudes internal atmospheric variability is large, especially during winter, leading to a small signal-to-noise ratio. Also, modeling studies show a wide spectrum of responses that are difficult to interpret, reflecting different experimental setups and, perhaps, model diversity.

The successful candidate will more systematically investigate the impact of the low frequency evolution of the Arctic on lower latitudes climate and extreme weather events, and will establish the thermodynamical and dynamical mechanisms that control it. The post-doctoral fellow will perform and analyse coupled model experiments with the new IPSL-CM6 climate model, which will be designed to emphasize the role of ocean-ice-atmosphere coupling in amplifying or damping the Arctic warming impacts, and to differentiate it from external forcing and other internal influences within the climate system. The novelty of these experiments will be the use of large ensembles to increase the signal-to-noise ratio. Furthermore, these experiments will be coordinated among various research groups using different climate models. This will assess the robustness the simulated changes in response to the warming Arctic, which could be compared to observational estimates. Some of these experiments will be coordinated within the Blue-Action H2020 project of the European Commission (Arctic impact on weather and climate, <http://www.blue-action.eu>) Work Package 3 ("Linkage of Arctic climate changes to lower latitudes"). The successful candidate will have the opportunity to interact with the other groups to plan, analyze and interpret this first set of simulations. In addition, the candidate will be encouraged to set up original experiments to further illustrate the main mechanisms leading to the linkages between the Arctic and the global climate.

The position will be located at LOCEAN, in central Paris at the Jussieu campus of the university Pierre et Marie Curie – Sorbonne Universités (<https://www.locean-ipsl.upmc.fr/index.php>). It is a joint CNRS/University/IRD/MNHN laboratory which is part of the Institut Pierre Simon Laplace (IPSL, <https://www.ipsl.fr>). The candidate will work in the climate variability and impacts team of LOCEAN, which includes about 30 persons, and has a large experience in investigating the processes of climate variability, and climate modeling.

Candidate should have a PhD in oceanography, meteorology, or environmental sciences, with a good background in statistical analysis and/or climate modeling. The position is offered for 2 years. Payment will be in accordance with french public service salaries (between 2400 and 3000 euros), taking into account previous work experience. The preferred starting date is October 2017. The position will be supervised by Dr. Guillaume Gastineau and Pr. Claude Frankignoul, with involment of Dr. Juliette Mignot. For information and application: guillaume.gastineau@upmc.fr and cf@locean-ipsl.upmc.fr.

Please submit before May 30th 2017 : a letter of interest, curriculum vitae, and the name, address, and telephone number of at least two references, and preferred starting date.