Post-doc position in Ocean variability, Extreme events and Tipping points at Météo-France research center (CNRM), Toulouse (France)

A two-year postdoctoral fellowship/researcher position (with a possibility for extension) is available for the research topic "**Assessment of ocean variability, extreme events and tipping points using Earth system models**" in the Centre National de Recherches Météorologiques (CNRM, Toulouse, France, http://www.umr-cnrm.fr/cmip6/).
Expected starting date is approximately **October 1st, 2019**.
Net annual salary ranges from 30624 to 39360€, depending on experience, with full social benefits.

General context and objectives:

The position is funded through the EU H2020 project COMFORT which aims to close knowledge gaps for key ocean tipping elements under anthropogenic physical and chemical climate forcing through an interdisciplinary research approach. This project aims to determine the consequences of passing tipping points in physical tipping elements for the marine carbon, oxygen, and nutrient cycles, as well as tipping points in biogeochemical tipping elements.
In this context, we plan to analyze and identify tipping point, extreme or non-linear events in ocean variability and track their impact on marine biogeochemistry or other climate fields. We aim to follow and potentially update the classification criteria of Drijfhout et al. (2015, doi:10.1073/pnas.1511451112) or Liu et al (2017, 10.1126/sciadv.1601666) with a particular focus on warming/stratification, ocean acidification and deoxygenation. The climate top-down drivers for marine biogeochemistry and key intrinsic mechanisms of tipping points will be analyzed applying new statistical approaches such as *Behavioral Change Point Analysis* to the CMIP6 model output, to high-resolution model simulations and available long-term observational data sets. To develop theses analyses, the researcher will benefit from a working platform offering a large number of CMIP5 and CMIP6 model outputs including CNRM-ESM2-1 and CNRM-CM6-1 simulations and several inhouse simulations performed over several thousands of years which are of high relevance for this work.

Required qualification

We are looking for a candidate with strong interests in oceanography, ocean biogeochemistry and climate physics, and with strong statistical (extreme value analysis) and numerical (Linux, Fortran, CDAT/Python, NCL) skills. The candidates should hold a PhD degree and have experience in in Physics, Environmental/ Climate Sciences, Mathematics, or similar disciplines. Experience with complex models on super-computers, analyses of large climate data sets is necessary. Innate curiosity, enthusiasm for reading scientific literature, excellent writing and communication skills in English are also essential.

Applicants should send to roland.seferian@meteo.fr :
[1] a curriculum vitae (including research experience, publications and conferences, computing skills and different language practice…)
[2] a brief statement of research interests
[3] names and contact details (email + telephone number) of three academic referees

Expected starting date is approximately **October 1st, 2019**.
Consideration of applications begins immediately.
Applications should be sent by email no later than **May 31st, 2019**.

Hosting institution

The Centre National de Recherches Météorologiques (CNRM) is the research department of Météo-France (http://www.cnrm.meteo.fr). It is responsible for conducting the largest part of the research activities in weather forecasting, climate modelling, atmospheric chemistry, land-surface processes including snow related processes, oceanography. Within CNRM, the climate research group is in charge of the development of global state-of-the-art CNRM Earth system model (CNRM-ESM), which includes components dealing with the atmosphere dynamics and chemistry (ARPEGE), ocean and sea ice (NEMO-GELATO), land surface & biosphere (SURFEX), and oceanic biogeochemistry processes (PISCES). Alongside the development of CNRM-ESM, CNRM contributes to the study of climate variability, of the projection of climate at global and regional scales, of atmospheric chemistry, ocean-atmosphere interactions and global carbon cycle. CNRM has a long history within the climate research community and contributes to the successive IPCC reports.