Post-doc CNRM (24 months)
" Impact of vegetation and land-use representation in global land surface climate simulations and global atmospheric seasonal forecasts "

A 24-month postdoctoral fellowship/research position is available for the research topic " **Impact of vegetation and land-use representation in global land surface climate simulations and global atmospheric seasonal forecasts "** in the Centre National de Recherches Météorologiques (CNRM, Toulouse, France, http://www.umr-cnrm.fr/)

Expected starting date is approximately Feb. 1st, 2021.

Closing date for application is Oct. 16th, 2020

The gross monthly salary, before income tax, will be between 3280 and 4025 €, commensurate with experience. This includes French social security and health insurance.

General context and objectives :

The position is funded through the EU H2020 - CONFESS[1] project, belonging to the EU

H2020 call " Copernicus evolution: Research activities in support of the evolution of the Copernicus services ".The aim of CONFESS is to improve the reliability and usability of the Copernicus Climate Change Service (C3S) information in the land-atmosphere coupled system by exploiting new and improved Earth Observations data records among which land-use and vegetation states delivered across different Copernicus Services. The added capacity to represent temporal variations and trends of these variables and the occurrence of hazardous/extreme events can impact the land water stock and fluxes, the land-atmosphere interactions, and ultimately contribute to the atmospheric predictive skill in seasonal forecasts using state-of-the art modelling systems. At CNRM, the land surface scheme is ISBA-CTRIP (Decharme et al. 2019) embedded into the SURFEX modelling platform, and the dynamical seasonal forecast system is based on the CNRM-CM6-1 coupled climate model (Voldoire et al. 2019).

In the framework of this postdoctoral position, it is expected that the candidate will :

 - Prepare a Leaf Area Index (LAI) dataset from ECOCLIMAP SG and a Land Use dataset from LUH2 at the model resolution (~1.5°), as well as an atmospheric forcing dataset derived from the ERA5 reanalysis
- Carry out and evaluate SURFEX stand-alone simulations (soil water content, snowpack, river runoff) over the 1993-2018 period, with prescribed land-use and either prescribed or interactive vegetation
- Assess atmospheric predictive skill of seasonal re-forecasts initialized with land states derived from the previous SURFEX simulations.

1**Con**sistent representation of temporal variations of boundary **f**orcings in reanalys**es** and **s**easonal forecasts

We are looking for a candidate with strong interests in land-vegetation-atmosphere interactions and feedbacks, and climate studies, and with demonstrated statistical and numerical (Linux, Fortran, Python and/or NCL and/or R) skills. The candidate should hold a recent PhD degree in climate science and have experience with complex models on super-computers, and analyses of large climate data sets. Innate curiosity, enthusiasm for reading scientific literature, excellent writing and communication skills in English are also essential. Some experience with land-surface modelling and/or evaluating climate prediction ensembles would be a clear asset.

Applicants should send to constantin.ardilouze@meteo.fr bertrand.decharme@meteo.fr and lauriane.batte@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 two academic referees.

Please note that attachments larger than ~5Mo are not accepted by our e-mail server.

Expected starting date is approximately February 1st, 2021. Consideration of applications begins immediately. Applications should be sent by email no later than October 16th, 2020.

Practical aspects:

The candidate will be based at the CNRM laboratory in Toulouse. Toulouse is a vibrant city that is recognized world-wide for its aerospace industry and research centers. The Centre National de Recherches Météorologiques (CNRM) is the research department of Météo-France (http://www.cnrm.meteo.fr) and a CNRS laboratory. It is responsible for conducting the largest part of the Météo-France research activities in weather forecasting, climate modelling, climate prediction, atmospheric chemistry, land-surface processes including snow related processes, and oceanography. CNRM has a long history within the climate research community and contributes to the successive IPCC reports.