**CUESTIONARIO ONLINE DE OFERTA DE POSICIÓN PREDOCTORAL**

**Position**

Project Title/ Job Position title:

Ph.D. student in climate prediction of fire risk

Area of Knowledge:

* Physical Sciences, Mathematics and Engineering

Group of disciplines:

PHYSICAL SCIENCES, MATHEMATICS AND ENGINEERING

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| Theoretical and Applied Mathematics, Computer Sciences |
| Physics |
| Geology, Earth Sciences, Environmental and Atmospheric Sciences, Mines, Geological Engineering, Oceanography, Hydrology |

Research project/ Research Group description (màx. 2.000 caràcters)

 In addition to being the largest source of biomass burning and a great source of pollutants and atmospheric CO2, wildfires can pose a threat to property and human lives and health. For instance, during the summers of 2016 and 2017, a combination of high temperatures, high winds and low rainfall led to a series of deadly and costly wildfires in southern Europe, in particular in southern France, northwestern Spain and Portugal.

While several short-term (up to 10 days in advance) fire danger systems are in place (e.g. The European Forest Fire Information System for Europe), there is currently no operational seasonal wildfire forecasting system for Europe. In light of recent events, seasonal prediction of wildfire danger is becoming a priority for health, safety and economic welfare of population most affected by this peril, as the development of such an innovative activity would to simultaneously raise awareness and prepare wildfire prevention and suppression strategies. This project aims to develop and assess seasonal fire prediction capability through a variety of complementary and innovative methods using statistical and dynamical models, with a focus on Europe, the Amazonian basin and Indonesia. This could lead to the implementation of a semi-operational forecast system to be tested in different demo-sites of the aforementioned regions.

This work will be carried out within the Earth Sciences Department of the Barcelona Supercomputing Center (BSC-ES), which is one of the world leaders in the development of climate prediction application and climate services. The successful applicant will be hosted conjointly by the **Climate Prediction Group** **(CPG)** and the **Earth System Service Group** (ESS), and will benefit from the IT support of the **Computational Earth Sciences Group (CES)** within the same department.

Job position description (màx. 2.000 caràcters)

The BSC-ES is looking for a young scientist with any nationality who wishes to undertake his/her Ph.D. in the application of climate predictions to the forecast of fire risk.

The successful candidate will work on the development of statistical and/or dynamical models for seasonal forecasts of forest fire risk. Possible forecasting techniques include statistical models combining observed and forecasted meteorological data, as well as the use of state-of-the-art Earth System Models composed of atmospheric, oceanic and land surface/dynamic vegetation components. The prediction skill will need to be assessed by comparison to observed fire occurrence using existing and novel statistical techniques. The primary region of interest will be Southern Europe but other regions will also be explored.

The work will be carried out in the context of several national and international projects, thus ensuring the international projection of the student. Throughout the duration of the Ph.D., the student will have the opportunity to present her/his results in different international scientific forums and will be encouraged to lead scientific research articles of high impact, and to contribute to outreach activities. We encourage applications from highly motivated candidates with demonstrated experience in climate-related studies, fire ecology, statistics and/or Earth system modelling.

The successful candidate will benefit from expert training and BSC staff benefits: international multidisciplinary scientific environment, advanced applied research training and cutting-edge High Performance Computing Environment. During the last 5 years (2012-2016), BSC-ES has published more than 150 research articles in peer-reviewed journals resulting from a very dense international collaborative network counting at least 50 institutes worldwide. BSC has been awarded with the Severo Ochoa’s Centre of Excellence project of the Spanish government since its first call (2011).

 **Group Leader**

Title: Climate Prediction Group Leader

Full name: Louis-Philippe Caron

Email: louis-philippe.caron@bsc.es

Research project/ Research Group website

http://www.bsc.es/ess/forest-fires

https://www.bsc.es/research-and-development/research-areas/climate-prediction