EUROPEAN COMMISSION

JOINT RESEARCH CENTRE

2022-IPR-E1-FGIV-020509	**FG IV - Scientific Project Officer – Hydrologic model developer for flood and drought early warning systems**

POSITION FOR:
Member of the contract staff FGIV – art. 3b of the Conditions of Employment of Other Servants
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1962R0031:20110101:EN:PDF)

WE ARE:
As the science and knowledge service of the Commission, the mission of DG Joint Research Centre is to support EU policies with independent evidence throughout the whole policy cycle.

The JRC is located in 5 Member States (Belgium, Germany, Italy, the Netherlands and Spain). Further information is available at: https://ec.europa.eu/jrc/

The current vacancy is in the Disaster Risk Management Unit of the Directorate for Space, Security and Migration which provides scientific and technical support to EU policies addressing global security and crisis management.

Amongst other tasks, the unit is responsible for the Copernicus Emergency Management Service which includes the flood and drought early warning and monitoring component with its European and Global Flood Awareness Systems (EFAS and GloFAS) as well as the European and Global Drought Observatories (EDO and GDO). Common to all those systems is the usage of the hydrological model LISFLOOD to predict floods, low flow events or other hydrologic variables. LISFLOOD (https://ec-jrc.github.io/lisflood/) is an open-source, spatially distributed rainfall-runoff model which was developed at the JRC and is used across the JRC to support not only hydrological forecasting but also other water related policies, for example by assessing the impacts of climate change on water resources or flood risk.

We are looking for a hydrologic model developer that helps us in further improving LISFLOOD in particular for the flood forecasting in EFAS and GloFAS as well as for assessing flood and drought risk under a changing climate. S/he will be part of the team that is responsible for policy support in the field of flood risk management as well as the management and further evolution of the Copernicus Emergency Management Service.

WE PROPOSE:
The selected candidate will:
- Evaluate how processes and methods (e.g. routing, infiltration, snow melt, reservoirs, etc.) in the hydrological model LISFLOOD can be further improved especially with a view on flood forecasting
- Assess whether the integration of additional data (e.g. from earth observation or other relevant sources) through the usage of data assimilation or deep learning methods can improve the hydrological simulations
- Contribute to maintenance, documentation and support of the open-source LISFLOOD github repository including associated tools such as LISVAP, calibration tool, etc.
- Collaborate and coordinate the development of LISFLOOD with other teams inside the JRC as well as external entities such as ECMWF
- Contribute to networks and partnerships related to flood risk management such as the JRC's Disaster Risk Management Knowledge Center.
- Contribute to the scientific output through peer reviewed publications as well as to science for policy briefs.

WE LOOK FOR:
The ideal candidate has a university degree (M.Sc. or comparable) in a relevant scientific area (atmospheric/geo/hydrologic /natural sciences, environmental engineering) together with a minimum of 3 years of research experience or a Ph.D. in the relevant scientific area.

The following skills are essential:
- Advanced experience in developing hydrological and/or earth-system models
- Good programming skills, in particular Python
- Experience in statistical analysis in particular time-series analysis
- Basic experience in machine learning methods, in particular deep learning

The candidate should have a proven track record of peer reviewed scientific publications.

Any of the following skills are an advantage:
- Experience in Geographic Information Systems including the handling and analysing large-scale spatially distributed datasets
- Experience in remote sensing
- Experience in data assimilation

Personal attributes:
- Good communication skills (verbal and written) in English (B2)
- Good interpersonal skills with demonstrated ability to work in a team and be willing to learn and adapt to new tasks
- Ability to work to deadlines and pay attention to detail even under time pressure

INDICATIVE CONTRACT'S DURATION:
36 months initial contract with possible renewals up to maximum 6 years.

PLACE OF WORK:
Ispra (IT)

ELIGIBILITY CRITERIA:

Candidates for this contract agent post shall:
– (i) have passed a valid EPSO CAST selection procedure;
or
– (ii) be registered in the EPSO Permanent CAST https://epso.europa.eu/documents/2240_en
or
- (iii) be registered in the specialised call for researchers https://ec.europa.eu/jrc/en/working-with-us/jobs/vacancies/function-group-iv-researchers (used mainly by the JRC).

With a valid application number to one of the above, you may then apply for this specific vacancy at JRC through: http://recruitment.jrc.ec.europa.eu/?type=AX.

RECRUITMENT POLICY:
The JRC
• Cultivates a workplace based on respect for other people and the environment.
• Embraces non-discriminatory practices and equality of opportunity. In case of equal merit, preference will be given to the gender in minority.