

Postdoc research in Information and Knowledge Systems (Hydroinformatics)

Experienced Water Postdoc Fellowship – COFUND Programme (2 years)

The Chair Group of Hydroinformatics (UNESCO-IHE Institute for Water Education) is inviting submissions for a post-doc position in Hydroinformatics. UNESCO-IHE will select and host 8 postdoc fellows from the submitted applications in several research areas. Funding is provided by the Horizon 2020 Research Programme of the European Commission. The details can be found on <http://ewpfp-cofund.unesco-ihe.org/ewpfp-cofund>

Applicants that would like to carry out research in Hydroinformatics are encouraged to submit an application that would fit the general research directions of the Chair Group: a) modelling paradigms, forecasting, uncertainty and risk; b) systems engineering and optimisation; c) internet-based and high performance computing.

For this particular postdoc programme we would especially welcome candidates with an interest to explore the following specific research topics:

1. Advances in data-driven and hybrid modelling (combination of physically-based and data-driven approaches), allowing for more accurate forecasts of floods and droughts.
2. Advances in physically-based modelling (1D, 2D), various application areas.
3. Developing novel architectures of adaptive hydrological models (optimal combination of models, ensemble modelling).
4. Novel methods of uncertainty analysis in models cascades (climate – meteorology – hydrological and hydraulic models – decision making).
5. Use of computational intelligence-based predictors of forecast uncertainty (probabilistic and fuzzy) in hydrological and hydraulic (flood) modelling.
6. Advanced methods of data analysis (e.g. using computational intelligence) for quantifying impacts of climatic and human-induced changes on local variables characterising water-induced natural disasters.
7. Data fusion and data-model integration – optimally combining various data sources (gauges, remote sensing) for water modelling and data assimilation.
8. Advancing surrogate modelling (meta-modeling) in model-based multi-objective optimization of complex systems (with applications to urban water systems design, reservoir management, groundwater management, real-time control).
9. Dealing with uncertainty in model-based multi-objective optimization (with applications to urban water systems design, reservoir management, groundwater management, real-time control).
10. Implementation of spatial-data infrastructures (SDI) and their integration with remote modelling platforms.

We are covering various application areas: catchments, river basins, floods and droughts, urban water, groundwater. Special interest and attention is to applications in developing countries.

How to apply:

<http://ewpfp-cofund.unesco-ihe.org/ewpfp-cofund>

(please mention the application area: “Information and Knowledge Systems”)

When preparing the application, please carefully consider the aims of this programme and the selection criteria.

Deadline: 30 April 2014.