ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Postdoctoral fellowship at UIUC: Soil moisture observation and modeling over the U.S. agroecosystems.

One Postdoctoral Researcher Position in the Department of Natural Resources and Environmental Sciences (NRES) and National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign (UIUC), full-time, 100% (2-year duration, with possibility of extension, contingent upon performance and funding).

Summary: The successful candidate will explore efficient and cost-effective ways to get high-resolution and high-accuracy soil moisture data for the U.S. agroecosystems. The candidate will use a combination of *in-situ* measurement, satellite remote sensing and process-based modelling to achieve this goal. The proposed work will directly contribute to deeper understanding of field-scale hydrology, crop water stress, and agricultural production predictability of the U.S. Corn Belt, which currently produces ~30% of the world's corn and soybeans, respectively.

Specific responsibilities include: designing and implementing a soil moisture observation network in typical agricultural fields of the U.S. Corn Belt; conducting high-resolution land surface modeling with constraints from *in-situ* and remote sensing data or developing new field-scale hydrological models; developing/building new retrieval or downscaling algorithms for soil moisture estimation using multi-spectral, hyperspectral, and/or microwave remote sensing data; preparing peer-reviewed publications and education materials; managing projects and reporting; and communicating research at professional meetings.

The successful applicant will be working with a team of scientists in earth system modeling and ecosystem dynamics, including Dr. Kaiyu Guan in UIUC (http://faculty.nres.illinois.edu/~kaiyuguan/) and Dr. Ming Pan in Princeton University (http://hydrology.princeton.edu/~mpan).

Qualifications: Applicants should have a Ph.D. in earth and atmospheric science, meteorology, hydrology, environmental engineering, physics, mathematics, or a closely related field. Prior research experiences in maintaining soil moisture observation networks, land surface modeling, satellite remote sensing, and data assimilation are highly preferred. Strong programing skills (e.g., Python, C/C++ and/or Fortran in the Linux environment) and prior experience in supercomputing or big data analytical systems is **required**, as the applicant will be working routinely in the supercomputer environment. Candidates will be considered if graduation with a Ph.D. is expected by the targeted starting date. Proficiency in spoken/written English is mandatory. The appointment is two years (renewed annually) and may be extended, contingent upon the performance. Salary is competitive and commensurate with experience in relevant research.

Starting Date: Ideal starting time is **April 15, 2020**, and prefer to start as soon as possible. The position is open till filled.

Application Process: To ensure full consideration, qualified candidates must send a cover letter, CV, and contact information of three references via e-mail to linxin@illinois.edu. All requested information must be submitted to the above email in order for your application to be considered. Incomplete application will not be reviewed. Qualified applicants will be immediately reviewed upon receiving the application while the search may continue until the position is filled. We will only give feedback to those candidates that we will interview. For further information, please contact: Dr. Kaiyu Guan (kaiyug@illinois.edu).

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