Scientist, Spatiotemporal Precipitation Modeling

About the Role

Come join the Stochastic Modeling Team in AIR’s Boston-based Research Department, and contribute to building state-of-the-art probabilistic flood models. Our team projects offer opportunities for creative problem-solving on a boundless set of interesting problems at the interface of extreme weather, climate change, and risk. Catastrophe models depend fundamentally on hierarchical modeling of space-time physical processes, inference from heterogeneous and incomplete calibration data, and ensemble techniques to quantify uncertainty. We learn continuously through interdisciplinary collaborations with a diverse team of meteorologists, applied mathematicians, climate scientists, engineers, and hydrologists. As such, this is a fantastic position for a curious statistician with a passion for modeling atmospheric processes! In addition to sharp technical skills, we also hope you will bring a practical, applied mindset to the role. This role is responsible for delivery and maintenance of simulated precipitation catalogs for AIR’s state-of-the-art flood risk assessment capabilities.

Day to Day Responsibilities

- Develop and enhance stochastic and physically-based precipitation models for regions across the globe, with a focus on the practical application of precipitation modeling, data assimilation, risk assessment, and insurance industry
- Collect, process, and analyze numerous and varied data types used for the precipitation simulation, bias correction, and validation processes. These data may include in-situ and satellite-derived observations, as well as data products and numerical model output.
- Be comfortable operating in real and near-real time on tight deadlines within a team to obtain the best possible representation of an actual precipitation event
- Assimilate data into the modeling process to bring model output close to observations
- Present AIR precipitation models to clients, government bodies and the science community
- Work closely with the flood modeling team to ensure smooth delivery of products representing both historical and simulated precipitation

Required Skills and Qualifications

- Advanced degree in statistics, climatology, or hydrometeorology required (Ph. D. preferred).
- Command of applied probability and geostatistics is essential, including applied experience with spatial or spatio-temporal statistical modeling and simulation. Experience in handling of large data sets would be a significant advantage, as would be familiarity with data assimilation techniques.
- Strong programming skills gained through practical experience using high-level language and tools such as Python, R, MATLAB. Skills in low level-languages such as C++ or FORTRAN would be a plus, as would be comfort with shell scripting and batch job submission in a Linux setting.
- Ability to gather, integrate, and critically analyze relevant meteorological data from multiple sources, including private and public national and international agencies.
- Excellent written and verbal communication skills, for both technical collaboration within and across disciplines, as well as for non-technical communication with clients.
- Ability to achieve goals and meet deadlines while working on multiple tasks. Demonstrated project management skills would be a plus.
- Passion for modeling the earth system under uncertainty.