Postdoctoral Fellow - Atmospheric Scientist
NREL - Golden, CO

The National Renewable Energy Laboratory (NREL), located in beautiful Golden, CO, is a leader in the U.S. Department of Energy's effort to secure an energy future for the nation that is environmentally and economically sustainable. Our mission is to develop renewable energy and energy efficiency technologies and practices, advance related science and engineering and transfer knowledge and innovations to address the nation's energy and environmental goals.

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Requisition # 3498BR

About NREL

The National Renewable Energy Laboratory (NREL) is a leader in the U.S. Department of Energy's effort to secure an energy future that is both environmentally and economically sustainable. With locations in Golden, Boulder and Washington D.C., NREL is the primary laboratory for research, development and deployment of renewable energy technologies in the United States. The NREL mission is to develop renewable energy and energy efficient technologies and practices, advance related science and engineering, and transfer knowledge and innovation to address the nation's energy and environmental goals.

Job/Research Summary

To assist the Solar Resources & Forecasting Group with various research projects involving the measurement, modeling, and analysis of solar radiation resources for renewable energy applications. Solar radiation data of known quality are needed to characterize the weather-driven variability of this energy resource over a wide range of historical time scales (1 s – decadal) and spatial scales (100 m – global). These characterizations are fundamental to the siting, design, economic performance modeling, and acceptance testing of solar energy conversion systems. Solar resource and meteorological data are also needed for modeling building system thermal performance and energy efficiency analyses. These data are also critical for developing solar resource forecasts in support of the increased deployment of photovoltaic and solar thermal conversion systems for central and distributed electricity generation. In addition solar forecasting forms a critical component of future plans to install and operate of high penetrations of clean technologies on the grid. This person should be a self-starter with demonstrated ability to quickly address the various scientific and technical aspects of solar and atmospheric measurements, modeling, data quality assessments involving large data sets (TBytes). This person should be able to work with a broad range of external stakeholders, including scientists, engineers, economists, policy makers, and others engaged in aspects of renewable energy systems integration.

Job Duties

Conduct scientific research to advance solar radiation resource measurements and modeling capabilities to improve the accuracy of solar forecasting at various times scales. Work with

researchers, energy developers and utilities to acquire, manage and analyze existing resource and power production datasets. Investigate the use of satellite- and ground-based observations for estimating solar resources. Work at a high-level with DOE and organizations involved in weather forecasting and numerical weather prediction model development. Develop applications to provide solar resource data for the validation and improvement of atmospheric mesoscale models and provide inputs to real-time power plant forecasting. Develop scientific applications software for the analysis of solar radiation and meteorological parameters in time-series and geospatial domains. Work with the NREL web team to make solar resource and meteorological data publicly available as appropriate. Present research results to key stakeholders and publish scientific findings in technical journals and conference proceedings.

Required Education and Experience

Must be a recent PhD graduate within the last three years.

Additional Required Knowledge, Skills and Attributes

Required Knowledge:

Demonstrates broad understanding and wide application of scientific principles, theories, and concepts in atmospheric physics (including radiative transfer) and instrumentation for the measurement of solar radiation and clouds.

Demonstrates capability to develop new scientific ideas and work independently. Demonstrates good technical writing skill as proven by relevant technical publications. Good interpersonal and communication skills.

Additional Required Knowledge and Skills:

Significant knowledge of modeling clouds, aerosols and solar radiation for various applications including numerical weather prediction and retrievals using ground based and satellite datasets. Significant programming experience in C, C++ or Fortran and Matlab/IDL. Knowledge of solar radiometry with the ability to use measurements to develop solution for solar energy applications.

Preferred Qualifications

Relevant Ph.D. in Atmospheric Science or Meteorology or equivalent. Ideal candidate will have modeling experience related to solar radiation and cloud physics for numerical weather prediction and satellite- and ground-based remote sensing.

Relevant science, engineering and R&D experience with peer-reviewed publications. Knowledge of solar resource characteristics, meteorology, atmospheric science, and measurement systems. Must be proficient in Microsoft Office products (Word, Excel, PowerPoint).

EEO Policy / E-Verify

NREL's policy is to provide equal employment opportunities to all qualified persons without regard to race, age, color, sex, religion, national origin, marital or veteran status, or any other legally protected status.

NREL validates right to work using E-Verify. NREL will provide the Social Security Administration (SSA) and, if necessary, the Department of Homeland Security (DHS), with information from each new employee's Form I-9 to confirm work authorization. For additional information, please click here http://www.nrel.gov/employment/eeo.html .

Pre-employment drug testing required.

Submit Your Resume

Please apply online at: **www.nrel.gov/employment** and search for Req #3498

Please include a cover letter specific to each position you are applying to indicating how you match the requirements of the posting.