

Graduate research opportunity: satellite remote sensing of soil moisture.

In June of 2009 the European Space Agency (ESA) will launch the Soil Moisture and Ocean Salinity (SMOS) mission, the world's first Earth-orbiting satellite that will make global measurements of soil moisture. Soil moisture directly impacts weather and climate as well as agriculture.

We are working to validate SMOS measurements of soil moisture, or in other words, verify that the measurements made from space by SMOS match measurements of soil moisture made on the ground.

We need a graduate student who will validate satellite soil moisture measurements using the data collected at an Iowa State / University of Iowa NASA-funded field site. The student will then use this data to improve weather or climate forecasting, or modeling of agricultural systems .

The student will be mentored by scientists at Iowa State, the University of Iowa, the United States Department of Agriculture (USDA), and by scientists within the US and European remote sensing communities. The student will receive interdisciplinary academic training, make presentations at national and international technical conferences, and publish in top research journals.

Qualifications: excellent quantitative skills commensurate with a degree in any physical science discipline, any engineering discipline, or mathematics; good physical science background and a strong desire to learn about Earth's environment; good communication skills; and the ability to work independently.

Funding: tuition, stipend, and benefits provided by a department fellowship, teaching assistantship, or research assistantship depending on qualifications.

Curriculum: the student will pursue a graduate degree in either agricultural meteorology or environmental science. These two programs draw upon courses from Iowa State's world-leading agronomy department and internationally-respected atmospheric science program.

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