

Towards a Global In-Situ Soil Moisture Network

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Soil moisture information is critical for understanding the global water and energy cycles, for predicting precipitation, and for advising local water resource managers. Based on theory and experiments to date there is a general agreement that both short and long term improvements in our understanding of the water cycle and our ability to model it should be possible with an integrated global soil moisture observing system. Improving these global observations is needed on a priority basis. The research and application community perspective is that insitu measurements, satellite observations, and modeling that must all be developed and integrated, primarily through a data assimilation framework. Modeling and data assimilation are already integral components of national and international weather and climate forecast programs. Satellite soil moisture mapping is now being evaluated with exploratory missions. Insitu soil moisture observations are perhaps the least advanced and organized. There are some ongoing efforts but these are few and there is no standardization. This paper will show the initiatives to develop a global in-situ soil moisture network by the International Soil Moisture Working Group, working under the auspicien of the Water Cycle Theme by the IGOS-P International Group on Water Cycle Observations.