



## **Scaling Soil Moisture Variations from Ground-Based to Satellite Scales**

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Soil moisture variability exhibits a range of behaviors over the entire spectrum of dynamic wetness. This variability depends critically on variables such as topography, land cover, soil properties and rainfall patterns, but also on the area of the region under consideration. Moreover, space-time scales of the representative sample also play an important role in how scaling behavior manifests itself. In this presentation, results from several ground-based soil moisture variability studies will be reviewed and extended to incorporate aircraft and satellite remote sensing scales. Of particular interest are scaling behavior changes associated with surface soil moisture versus total water storage, hysteresis, and the expression of extreme events. Results will have implications for the representation of soil moisture in land surface models, for soil moisture network design, and for downscaling/upscaling remotely-sensed soil moisture.