State-of-the-art in soil moisture remote sensing

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Soil moisture provides an important boundary condition to numerical weather prediction and seasonal-to-interannual climate forecasting, through its control on moisture and energy fluxes from the land surface to the atmosphere. While there has been much research on developing soil moisture remote sensing capabilities over the past three decades, the first dedicated soil moisture satellite was not launched until late 2009. However, there are now several satellites with soil moisture monitoring capability, and some of these have plans to provide long-term monitoring records, making them ideally suited to operational applications including meteorology. The current and planned capabilities in soil moisture remote sensing will be presented in the context of weather and climate modelling.