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A roadmap for high-resolution satellite soil moisture applications

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This contribution presents the main findings of a recently published review on high-resolution satellite soil moisture applications (<https://doi.org/10.1016/j.rse.2020.112162>). The scientific community has made significant progress in estimating soil moisture from satellite-based Earth observation data, particularly in operationalizing coarse-resolution (25-50 km) soil moisture products. This presentation summarizes existing applications of satellite-derived soil moisture products and identifies gaps between the characteristics of currently available soil moisture products and the application requirements from various disciplines. This presentation also discusses the efforts devoted to the generation of high-resolution soil moisture products from satellite Synthetic Aperture Radar (SAR) data such as Sentinel-1 C-band backscatter observations and through downscaling of existing coarse-resolution microwave soil moisture products. Open issues and future opportunities of soil moisture remote sensing are discussed, providing guidance for the further development of operational soil moisture products and for bridging the gap between the soil moisture user and supplier communities.

The published review is:

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