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## Assimilation of Sentinel-1 backscatter data into AquaCrop v7 for soil moisture and biomass updating over Europe

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Recent advances in gridded crop modeling and satellite observations help to improve the monitoring of crop growth and water requirements. In this contribution, we use AquaCrop v7 within the NASA Land Information System (i) to produce spatially distributed estimates of soil moisture, biomass and backscatter, and their uncertainty, and (ii) to assimilate backscatter observations from the Sentinel-1 satellite mission to improve soil moisture and biomass via state updating, at 1 km resolution over Europe. The results are evaluated against in situ observations of soil moisture and satellite-based vegetation products. We will discuss the opportunities and challenges of high-resolution gridded crop models and satellite-based active microwave data for agricultural applications.