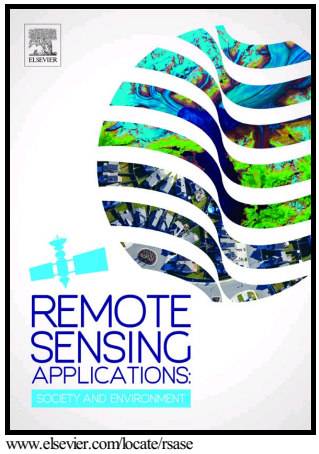

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SMOS based high resolution soil moisture estimates for desert locust preventive management

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Abstract

This paper presents the first attempt to include soil moisture information from remote sensing in the tools available to desert locust managers. The soil moisture requirements were first assessed with the users. The main objectives of this paper are: i) to describe and validate the algorithms used to produce a soil moisture dataset at 1 km resolution relevant to desert locust management based on DisPATCh methodology applied to SMOS and ii) the development of an innovative approach to derive high-resolution (100 m) soil moisture products from Sentinel-1 in synergy with SMOS data. For the purpose of soil moisture validation, 4 soil moisture stations where installed in desert areas (one in each user country). The soil moisture 1km product was thoroughly validated and its accuracy is amongst the best available soil moisture products. Current com-

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