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## A simple parameterisation for retrieving soil moisture from passive microwave data

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**Abstract.** MICRO-SWEAT, a physically based soil water and energy balance model coupled with a microwave emission model, was used to investigate the relationship between near surface soil moisture ( $\theta_{0-5}$ ) and *L*-band microwave brightness temperature ( $T_B$ ) under a wide range of conditions. The effects of soil texture, look angle and vegetation on this relationship were parameterised and combined into a simple summary model relating  $\theta_{0-5}$  to  $T_B$ . This model retains much of the physical basis of MICRO-SWEAT but can be used in more data limiting circumstances. It was tested using a variety of truck-based *L*-band data sets collected between 1980 and 1982. This paper emphasises the need to have an accurate estimate of the vegetation optical depth (a parameter that describes the degree of influence of the vegetation on the microwave emission from the soil surface) in order to retrieve correctly the soil water content.

**Keywords:** passive microwave, soil moisture, remote sensing, vegetation, retrieval algorithm

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