

Dear G. d'Urso

Thanks for your pertinent comment of our paper-“Extension of the Hapke bidirectional reflectance model to retrieve soil water content”.

Three main reasons for our work of this paper should be pointed as follow:

- (1) I agree with your opinion that it is well known for soil reflectance influenced by water content. Although, there are many studies to retrieve soil water content from empirical or artificial neural networks, however there is a few literature about using Hapke BRDF model and ground multiangular observations to estimate soil water parameter like our work up to now. On the other hand, just well known, the soil water retrieval was limited by many conditions, just like soil type, drainage patterns, etc, our task only focus on bare soil in the North plane of China. Otherwise, anyone can not give a universal soil BRDF model in the solar domains including soil water, canopy parameters, and the BRDF model suits for any conditions.
- (2) Actually, microwave as the best way to estimate soil water has been test by many studies. But we want to detect the potential information of multiangular observations to estimate soil water. The results show that the equivalent water thickness can be obtained with high accuracy in our paper. Moreover, just as remote sensed drought monitoring, the equivalent water thickness may be more suitable than real soil water content to evaluate region drought.
- (3) We do not want to give an important advancement of Soil BRDF model. We mainly focus on existed methods and models to preliminary apply in soil water parameter retrieval and to support precision agriculture utilization. I confirm that many aspects of our study should be improved in this paper, just like careful validations, canopy background, different soil conditions, etc. In the future, subsequent studies mainly focus on these problems and may be published these advancements in a new paper.