Abstract Title
Diurnal variations of the radiometric signal of a natural fallow at L-Band

Abstract Text
The SMOS mission aims at delivering global fields of sea surface salinity and surface soil moisture using L band radiometry. Its overpass times are scheduled at 6 am and 6pm were dew and temperature gradients might play an important role in emission. In the framework of the SMOS Mission preparation, the intensive and long term field experiment SMOSREX is taking place in the south of France since 2001. A precision L-band dual polarization radiometer was especially designed for the experiment, and monitorizes continuously a natural fallow under different incidence angles. Hence, SMOSREX provides an unique several year dataset to study diurnal variations of vegetation radiometric signal. In this context, this study aims at (i) better understanding of the different effects influencing microwave signal at diurnal scale (ii) quantifying the effects of internal and external water content on vegetation emission at L-band. For that study, field instrumentation was completed for the purpose of dew detection and with an optical sensor providing vegetation water content. We present a comparison of the different measurement techniques, describe the characteristics of the vegetation emission at diurnal scale and finally we quantify the effects of internal and external water content at the L-band emission.

Scientific Topic
04 Physics of the measurements

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