



## **The Effect of Dew on Passive L-Band Microwave Observations**

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Recent field experiments show that dew has a significant effect on L-band microwave observations. Morning dew significantly influences the diurnal cycles of the brightness temperatures of different vegetation sites. At an experimental grass site in the Netherlands (ELBARA2003), and at an experimental fallow site in France (SMOSREX) several dew events were able to increase the horizontal polarized brightness temperature up to 10 K. This is in contrary to recent published results, where they expect that dew does not have any effect on L-band (1.4 GHz) observations. The effect of dew on the microwave signal has been studied and compared with micrometeorological measurements and an atmospheric dew model. By using a recently published microwave vegetation model we were able to quantify the amount of dew using these L-band observations. The results compared well with the atmospheric dew model and another remote sensing technique to measure dew using a spectral reflectance sensor.

In addition, future L-band satellite missions SMOS and HYDROS will observe the Earth surface in the morning, when dew is most likely. This will have a significant effect on current soil moisture retrieval methodologies, resulting in an underestimation of soil moisture.