



Precipitating clouds monitoring over Antarctica: interpretation of satellite-based microwave signatures

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Brightness temperatures acquired by the Advanced Microwave Sounding Unit-A/B (AMSU-A/B) sensors aboard NOAA-15, -16, and -18 satellites are here used together the outputs of Polar MM5, a mesoscale model optimized to run over extensive ice sheets, to point up precipitating clouds occurrences. As a matter of fact, satellite-based microwave measurements are able to offer new information about the microphysical properties of clouds and precipitation also over Antarctica, but they need the help of a physical support to correctly interpret the measurements.

The ultimate aim is actually to organize an algorithm able to provide quantitative, reliable, operational estimates of precipitation over Antarctica. In this work some coincident model-satellite depictions of precipitating clouds distribution over Antarctica, coupled with sensitivity studies concerning the potential of different microwave frequency channels, will be shown and discussed in order to introduce a possible synergic AMSU-MM5 approach to the precipitation retrieval at high latitudes.