



3DVAR assimilation of SSM/I data for the IOP2b MAP case

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Data assimilation by 3DVAR of data from the Special Sensor Microwave/Imager (SSM/I) has been performed to study a Mesoscale Alpine Programme (MAP) case, the IOP2b (19-21 September 1999). SSM/I data are assimilated as Brightness Temperature or as Precipitable Water and surface wind speed retrieved from the Brightness Temperature. The effect of the thinning of the observations has been studied. Moreover, a set of sensitivity test cases has been carried out. The one by one removal of the SSM/I frequencies from the initial dataset allows to evaluate their impact on the Initial Conditions.

A few experiments are performed using these new Initial Conditions to initialize the mesoscale model MM5 (PSU/NCAR). The results show that the assimilation of the retrieved quantities, i.e. Precipitable Water and surface wind speed, does not produce large improvement in the Initial Conditions. Vice versa, the assimilation of the Brightness temperatures produces a large variability of the Initial Conditions. The forecast experiments show that the model is very much sensible to the 22GHz and 37GHz frequencies.