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Influence of blowing snow on katabatic winds dynamics as simulated with a Regional Climate Model

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The RCM MAR (Modèle Atmosphérique Régional) has been developed for simulating the climate of the polar regions. MAR is coupled with a blowing snow model, including the feedback of blown snow particles on the pressure gradient force. A simulation of 1998-2002 is performed with MAR in which the blowing snow model is switched on or off. A sensitivity to the presence of blown snow particles is found for wind speeds in excess of 30 m/s. In this case the wind speed may increase by up to 15% in the upper part of the katabatic layer.