



A coupled snow - blowing snow - regional climate model

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The climate of the Antarctic Ice Sheet is simulated with the regional climate model MAR (Modèle Atmosphérique Régional). MAR is coupled to a detailed snow pack model and a blowing snow model including a parameterization of the snow erosion threshold friction velocity. The impact of sastrugi formation and of blown snow particles on atmospheric turbulence is also taken into account. The horizontal grid size of MAR is 40 km and its lateral forcing is obtained from the european reanalyses ERA-40, The simulation is started in 1980 and the sensitivity of the simulated dynamics and surface mass balance to the erosion and transport of snow by the wind is analyzed.