## Inputs For Blowing Snow Numerical Model: in Situ Measurement Are Still Needed

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The NEMO numerical model of drifting snow, whose general outlines are presented in this paper, is based on a physical model for saltation and turbulent diffusion. The model needs a set of input parameters including fall velocity, threshold shear velocity, shear velocity, mass concentration and roughness, which are obtained from empirical formulae and wind speed measured at a given height. To better determine the required field data in an alpine context, our experimental site, Col du Lac Blanc (2700 m) in the French Alps, was first equipped with blowing snow acoustic sensors, which proved not to be accurate enough for research purposes in the current state of development even though a new calibration curve was used. We therefore returned to the traditional, robust mechanical traps and a 10-m mast with six anemometers, two temperature sensors and a depth sensor to better determine friction velocity and aerodynamic roughness. For the drifting snow events studied, (i) the proportionality of the aerodynamic roughness to the square of the friction velocity was confirmed but with a proportionality ratio depending on the snow drift event, (ii) values or $\sigma_s U_F$ were relatively well approximated by empirical formulae obtained from Antarctica data, and (iii) snowdrift concentration profiles obtained by Pomeroy's semi-empirical formulae for saltation layer coupled with theoretical approach for the diffusion layer overestimated the concentration profiles for the studied blowing snow event.