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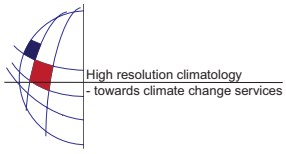

Modeling snow drift in the turbulent boundary layer

G. Lieberherr (1), C. Groot Zwaaftink (2), J. Overney (1), M. Diebold (1), N. Vercauteren (1), M. Lehning (2), and M.B. Parlange (1)

(1) School of Architecture, Civil and Environmental Engineering, EPFL, Lausanne, Switzerland (gian.lieberherr@epfl.ch), (2) Swiss Federal Institute for Snow and Avalanche Research, WSL, Davos, Switzerland

The modeling of snow redistribution in turbulent conditions plays an important role for the prediction of snow accumulation and avalanche risk. For this aim two Lagrangian models, one for the suspension and one for the saltation of snow where coupled. The saltation layer model, where the snow particles are initially entrained, acts as the lower boundary condition for the suspension model: Snow particles can be lifted into suspension where they are convected with the flow and no longer follow the characteristic ballistic trajectories of the saltation process. The wind field data for both models was previously generated by a large eddy simulation of the atmospheric boundary layer.

The saltation model used in this work is an adapted version of the one implemented in the Alpine3D model used at the Swiss Federal Institute for Snow and Avalanche Research. The suspended transport is modeled by a 3-D Lagrangian Stochastic Model. However the verification of the suspension model for snow particles is still pending.

Further work will scope on the fully coupling of Lagrangian saltation and suspension as well as the large eddy simulation into one complete snow drift model.