



Real-time modelling of the snowpack including drifting snow.

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For many years, the Snow Study Center of Météo-France has developed and operated a real-time suite (SCM) for the simulation of the snow-cover stratigraphy and avalanche risk assessment over the Alps and Pyrenees. This poster presents the integration, use and validation of snowdrift applications into this operational suite. These new developments, called SYTRON(1, 2, 3), are fully coupled with the SCM environment (snow energy balance, metamorphism and wind estimation), at hourly time step. The SYTRON1 module runs at the massif scale (around 400 km²) and aims at representing the main mass snow transport (erosion, sublimation and accumulation) on opposite aspects at different elevations of the concerned massifs. The SYTRON3 module is a 3D physical model, which runs at finer scale (around 50 m) using appropriate DEM and adapted wind field over specific mountainous locations. The purpose is to represent as best as possible the effects of the three modes of snow movement: creep, saltation and eddy diffusion and their consequences on snowpack stability. The validation of these modules is performed at the "Col du Lac Blanc" test site (2700 m a.s.l., French Alps) by several ways (intensive periods of field observations, snow pole networks, digital photographs, and data from automatic weather station).