Objectives:
- To simulate blowing snow processes including snow transport, snow interception in canopies and sublimation.
- To compare the resulted snow water equivalent (SWE) values among different landscape units.

Results

Snow accumulation and associated SWE were found to be higher in deciduous forests than in agricultural sites. Snow erosion of agricultural fields and snow deposition in deciduous forests seem to compensate canopy losses. On the contrary, great amounts of snow interception in canopies and its sublimation before reaching the ground were responsible for lower SWE in coniferous forests.

In addition, the maintenance of the crop residues (conservation tillage practice) resulted in higher SWE in the agricultural sites compared to the case where all the residues are removed (conventional tillage practice). This outcome indicates that a change towards conservation tillage practice would be critical in managing and conserving snow water for use in agricultural production.

Taken together, it is shown that land use type and the associated roughness exert a critical control on snow distributions in this type of landscape, and perhaps on possible implications for future snow hydrology of the catchment.

References

