

## Notes from snow parameterisation group in Kuopio

Implement snow interception based on a parameterisation which use a bigger capacity for snow than for rain (e.g. Hedstrom and Pomeroy). Important for comparison with satellite measurements.

Use separate soil columns beneath snow and for bare soil/vegetation part of a patch. Otherwise we can have melting of snow from below when the bare soil part is heated in the spring and warms the soil under the snow.

We may use different level of complexity for snow in forest and over open land.

Snow fraction formulations should include the hysteresis effect of snow growth/melt by e.g. make use the snow density in the parameterisation. Also, information on orography should be used since snow melt is more patchy in mountainous terrain.

Use river discharge for different drainage basins to evaluate land-surface parameterisations (e.g. snow in forest).

Blowing snow can redistribute snow between open land and shrub/forest within the same grid/patch.

The double-energy concept presented by Stefan seems to be ok... Maybe we should not decouple snow and vegetation totally...

The ice model HIGHTSI presented by Bin Cheng could be implemented in SURFEX as one option of ice/snow model for sea ice.