

Using COSMO and observation data for snow melt modeling

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Spatial snow melt modelling over complex topography



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– Models:

- Degree-day model with enhanced EB index using EkF data assimilation (Magnusson et al. (2014))
- Mass and energy balance snow models with BDE data assimilation: JIM (Essery et al. (2013)); FSM 2.0 (Essery (2015))

– Resolution:

- 1 km, 250 m horizontal resolution and single points
- Daily and hourly temporal resolution

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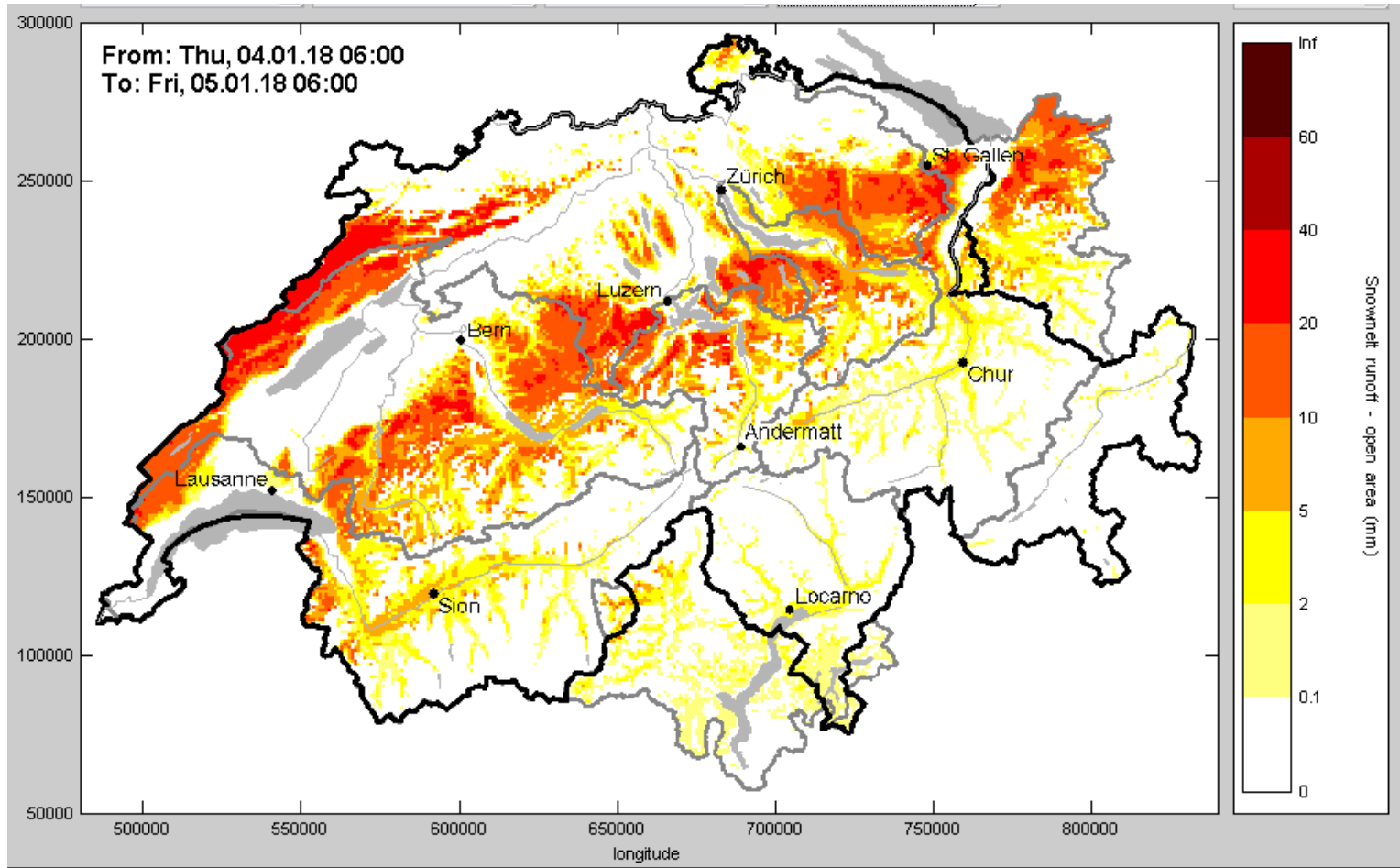
– Input:

- Coarse-scale meteorological input (T_a , p , v , SW, LW etc.)
 - Observation data (T_a , HS, Precipitation)
 - Digital elevation and landuse model
- ➔ post processing input, downscaling, data assimilation, subgrid parameterizations

– Output:

- Surface variables (snow melt runoff, surface temperature etc.)

Mass and energy balance snow model



Downscaling wind -exposed stations-

