

Model-Aided Assessment and Prediction of Local Avalanche Hazards

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Motivation:
Support local authorities, public stakeholders
and users in risk assessment and mitigation
Scope of application:
Exposed infrastructure and settlement areas,
endangered ski resorts

- Idea:**
- Develop a system to assess and predict **local** avalanche risk with the help of a model-chain
 - Integrate and combine various model – and observational data components to optimally assess local avalanche danger
- Concept:**
- ① Collect and combine all data representing local conditions
 - ② Estimate conditions in the avalanche release area (account for snow drift and gradients of atmospheric parameters)
 - ③ Simulate detailed snow cover characteristics in the release area (SNOWPACK¹, empirical models)
 - ④ Use model results to assess snow cover stability, avalanche type, fracture depth
 - ⑤ Select runout scenario
 - ⑥ User-tailored risk assessment matrix

References:
¹ Lehning, M., Bartelt, P., Brown, R.L. and Fierz, C., 2002: A physical SNOWPACK model for the Swiss avalanche warning; Part III: meteorological forcing, thin layer formation and evaluation. Cold Regions Science and Technology, 35(3): 169-184.

