

Model-Aided Assessment and Prediction of Local Avalanche Risk

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Motivation:
 Support public stakeholders, local authorities and experts in risk assessment and mitigation

Scope of application:
 Exposed infrastructure and settlement areas, endangered ski resorts

Idea:

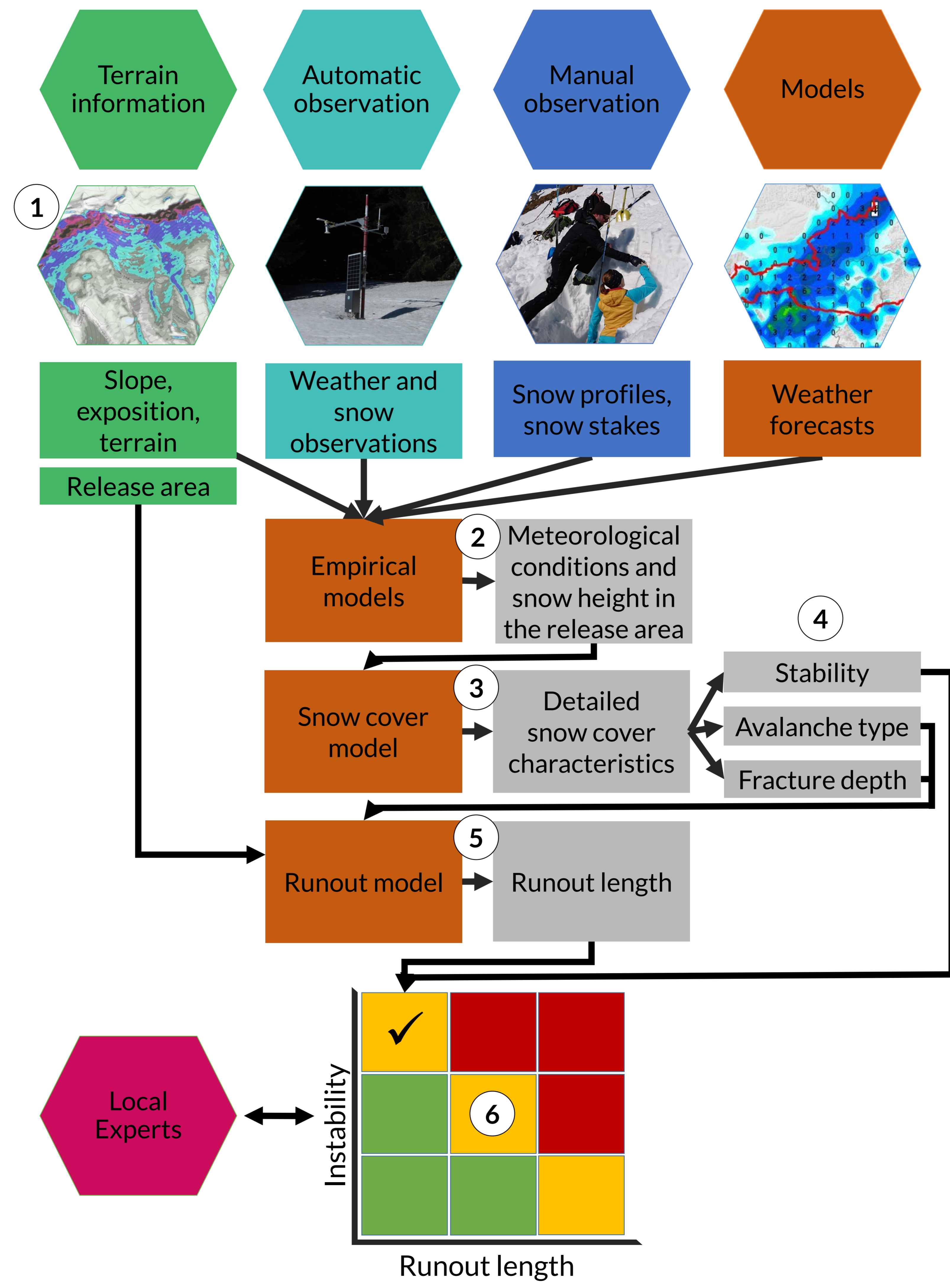
- Develop a system to assess and predict local avalanche risk with the help of a model-chain
- Integrate and combine various model - and observational data components to optimally assess local avalanche risk

Concept:

- Collect and combine all data representing local conditions
- Assess conditions in the avalanche release area (consider snow drift and local meteorological conditions)
- Simulate detailed snow cover characteristics in the release area (SNOWPACK¹)
- Use model results to assess snow cover stability, avalanche type, fracture depth
- Select runout scenario
- User-tailored risk assessment matrix

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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.



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Local Experts

Instability

Runout length