



# A localized avalanche risk assessment strategy assisted by on-site user-generated data

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- prototype:
  - mobile web-application for skier/alpine touring
  - scientific support from LWD Steiermark
- avalanches - alpine hazards
  - different types and triggering



Small slide, own picture



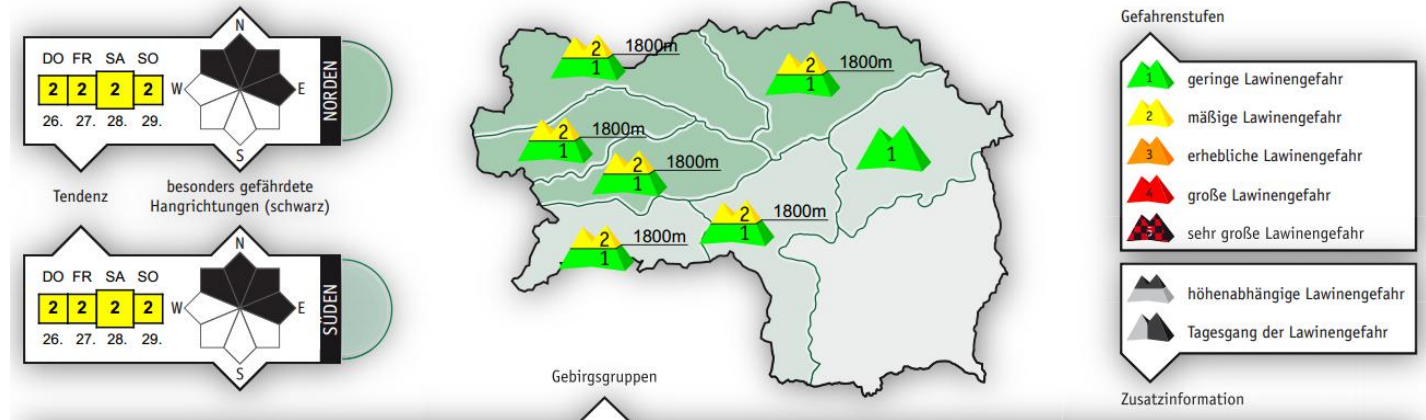
floe avalanche cc by-sa 2.0 USDA

- riskassessment through:
  - physical laws
  - Known riskfactors
- Riskreduction for Skiers:
  - through equipment
  - knowledge and experience
  - Information about riskfactors:
    - terrain
    - weather
    - avalanche bulletin

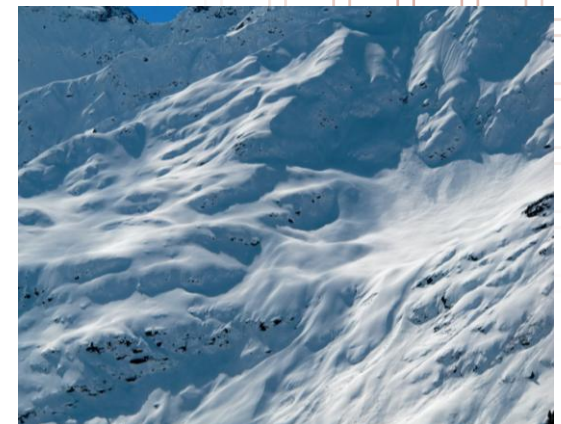


before /after in Kloster Foto: SLF/M. Gerber 2011

- expand traditional avalanche bulletin
  - spatial accuracy



- availability/combination of information
- realise a **user-feedback**
- **position-relevance** of the information



Terrain at Verwallgruppe, own picture

- Limitations:
  - computed risk-assessment
  - no model for calculating the avalanche danger
  - knowledge and experience of users
    - Overwhelming user with information



Avalanche rescue cc by-sa 2.0 Keri Lynn Kempton

- Information available through mobile browsers:
  - basemap
  - avalanche bulletin map
  - user position and orientation (through HTML 5 API's **geolocation**, **deviceorientation**)
  - weatherstations
  - user feed-back
    - divided in categories
    - category dependent attributes
    - pictures
    - Standardinformation
- Database management through PostgreSQL/PostGIS DB



Device Orientation, Ahmet Mermerkaya 2014



Schneeweichte am Rendl, eigene Aufnahme

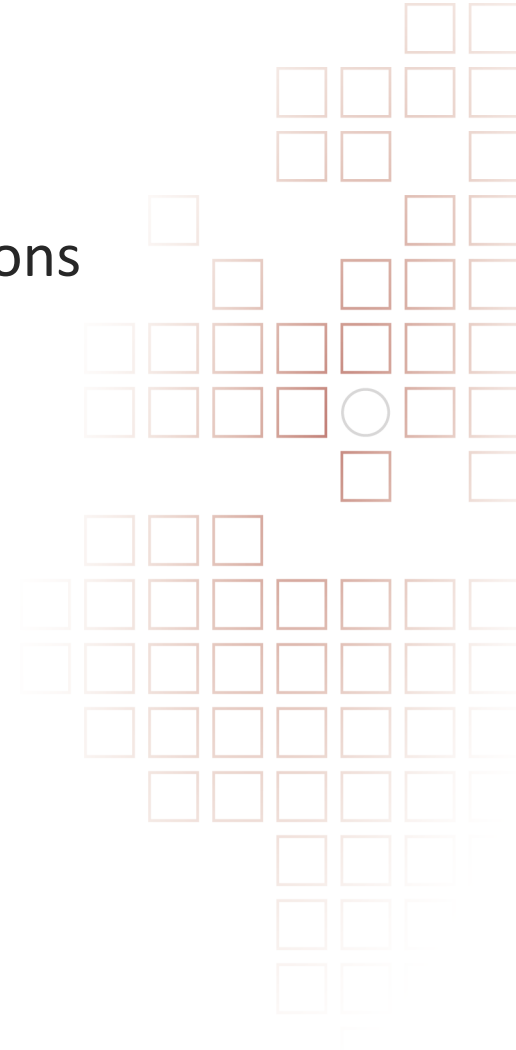
## 3x3 reduction method by Austrian Alpine Association

- Standardmeasures at planning level:
  - weather ✓
  - avalanche bulletin ✓
  - map ✓
- while touring:
  - making use of terrain ✓
  - orient ✓

- decisionstrategy:
  - Check 1 – rule out terrain based on slope
  - Check 2: risksigns:
    - fresh snow ✓
    - old avalanches ✓
    - drift snow ✓
    - ....

user feedback

- Realising project with partners
- as „native“ App for mobile OS
- Assess possible further functions and extensions







**GEO**  
INFORMATION

# Thank you for your Attention! Questions? Suggestions?

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