

# Modeling snow melt processes in Alpine areas

## Objectives

- use binary pattern data to develop and test a model of distributed catchment response
- model snow melt and snow patterns distribution

Jansa J, Kraus K, Blöschl G, Kirnbauer R, Kuschnig G. Modeling snow melt processes in Alpine areas. International Archive of Photogrammetry and remote sensing, vol. XXXIII, 2000. Amsterdam, CD-ROM.

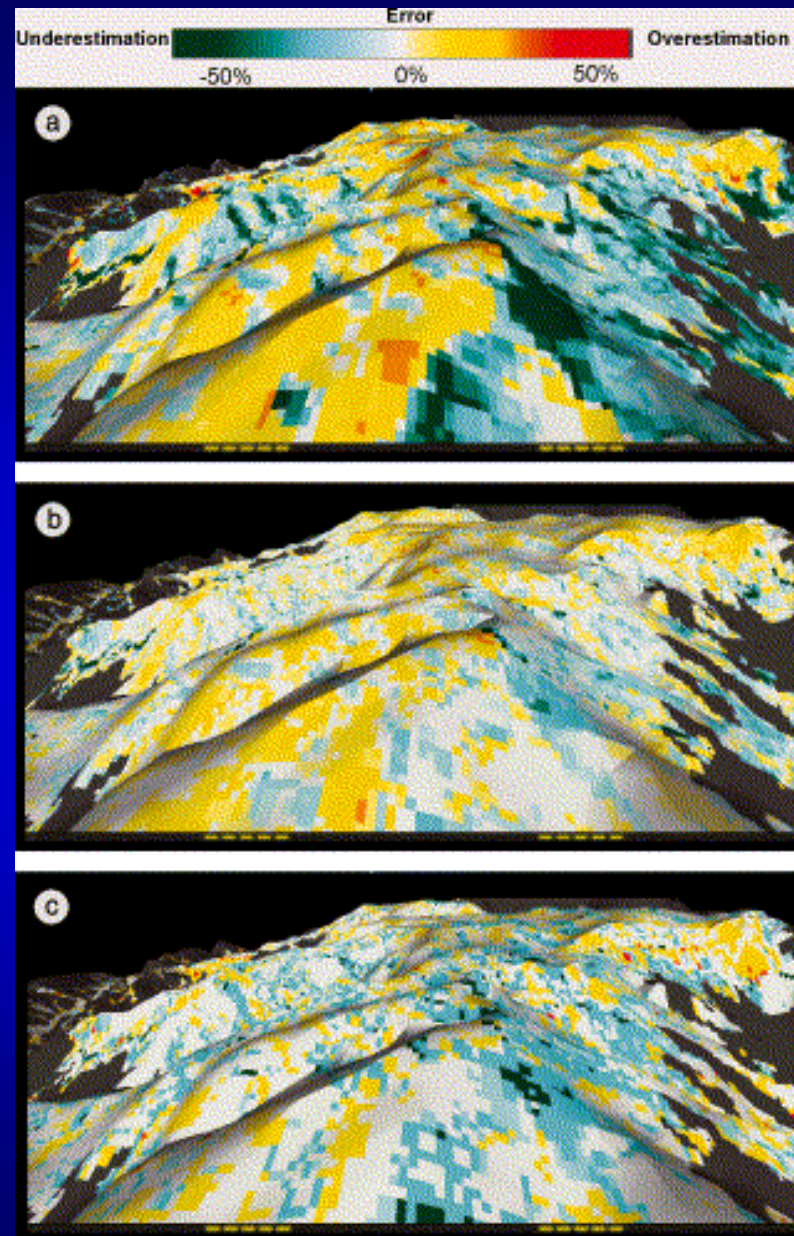
# VUTS model

- Vienna University of Technology Snow model
  - Heat
  - Mass flow
- Atmospheric data
  - global radiation
  - air temperature
  - humidity
  - wind speed
  - precipitation

# Method

- derive snow cover patterns from analysis of SPOT XS
- run VUTS with a standard parameter set
- derive combined error maps
- calibrate parameters of the snow-drift model
- run calibrated model for the same snow season
- run calibrated model for a different snow season

# Results

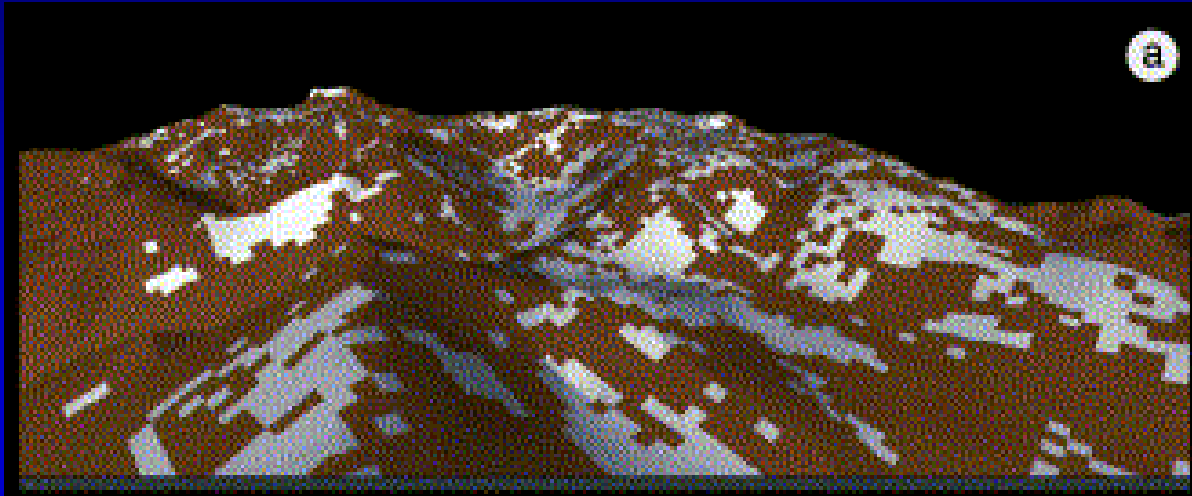


Pre-calibration

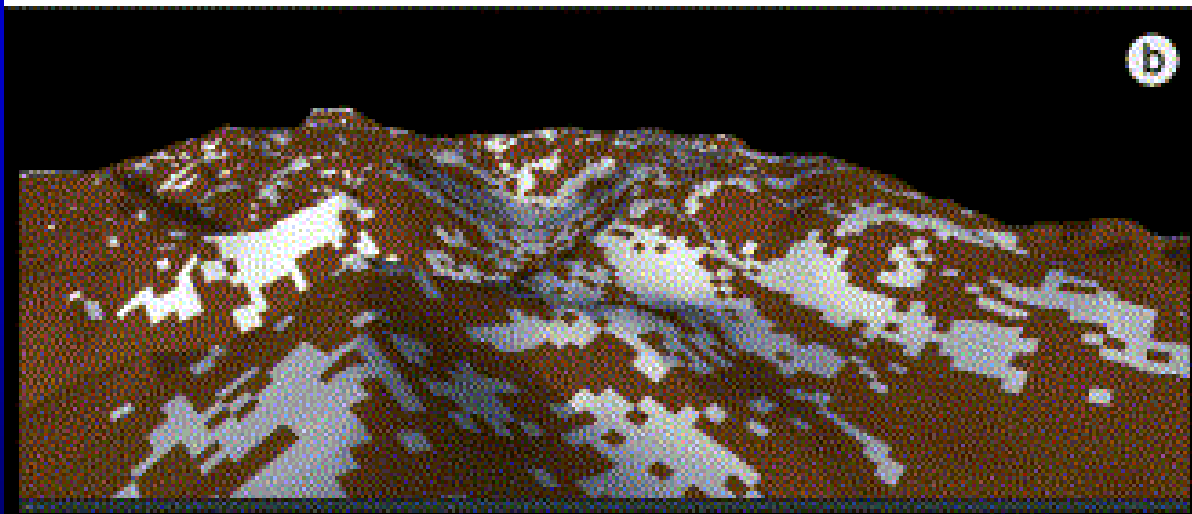
Post-calibration

Validation

# Results



SPOT XP



Simulation

- Jansa J, Kraus K, Blöschl G, Kirnbauer R, Kuschnig G. Modeling snow melt processes in Alpine areas.
- International Archive of Photogrammetry and remote sensing, vol. XXXIII, 2000. Amsterdam, CD-ROM.

# Conclusion

- the use of the revised parameter set increased confidence in the results
- the pattern of wind drift is “time stable”
- the use of observed patterns clearly improved the simulations