

**AUTHORS** Jan Drenovec, Rok Oblak, Sara Ručigaj, Simon Udir, Vid Žepič

SUPERVISOR dr. Jure Žalohar

# Defining the South Alpine Thrust Fault in the Central Slovenia



# In the research paper we present a new tectonic and structural interpretation of the South Alpine Thrust Fault in the Central Slovenia, between the Kropa village and Kamnik. The new interpretation is based: (1) on geologic field work and mapping, (2) on the analysis of the digital terrain model of Slovenia and (3) on the numerous microtectonic studies and interpolation of the paleostress fields in the geological past of the region.



#### **Problem overview**

- Geological structure of the region between the Kropa village and Kamnik was not sufficiently well understood in the geological literature.
- The region is exceptionally important for the reliable interpretation of the South Alpine Thrust Fault, along which the Southern Alps are thrust upon the Outer Dinarides.





New interpretation of the tectonic structure of the region, Quaternary faults and most important paleostress directions.

## Data and Methods

- Digital terrain model with 5 m pixel size (feature image of the poster).
- Microtectonic studies and fault-slip data measurement.
- New geologic maps of the region between Kropa village and Kranj and of the Tunjice hills.
- Detailed geologic mapping of the region.
- Stress and strain analysis of the fault slip-data.
- Interpolation of the paleostress and paleodeformation field of the region.



the yellow colour on a west part of the poster feature image.



**Up:** New and unpublished geologic map of the territory between the Kropa village and Kranj (author: Jure Žalohar).

- Analysis of the digital terrain model, including hillshading and bipolar differentiation method.
- Finite-element modelling (FEM) of the stress fields in the region.



New structural interpretation of the Sava Fault zone east from Kamnik.

FOR SPACE SCIENCE AND TECHNOLOGIES

CENTRE OF EXCELLENCE

•••••••SPACE·SI









Field work.

### Conclusions

- The south Alpine Thrust is represented by the Krn Thrust Fault.
- The Krn Thrust Fault represents very important structural boundary between (1) the rocks of the former Julian Carbonate Platform and Slovenian Basin, and (2) between the Slovenian-Hungarian Paleogene Basin and Pannonian Basin.

Small Satellites Systems and Services - The 4S Symposium 2012 Portorož, Slovenia, 4-8 June 2012

