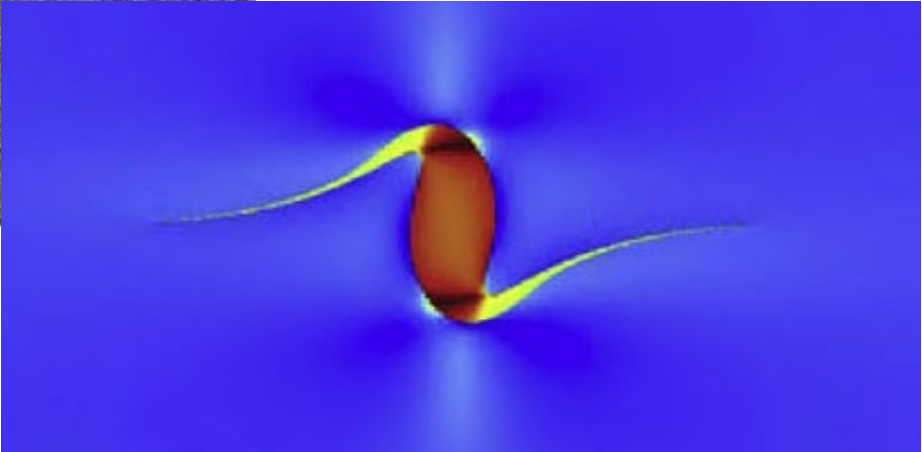


TS10.2 Quantitative structural geology



Quantitative analysis tools

Imaging techniques

photogrammetric methods

highly accurate, three-dimensional models

quantitative mechanical models of rock deformation processes

Imaging techniques – the small scale

- [Quantifying the precursors to brittle failure in rocks using synchrotron imaging and machine learning](#)
Francois Renard, Jessica McBeck, and Benoît Cordonnier



Keynote Display

Going to larger scales: Digital outcrop models

- [Faber, R., Domej, G., 2020. Computer-Assisted Geological Mapping \(CAGEM\) in 3D with WinGeol by TerraMath: the Richât Structure in Mauritania.](#)
Robert Faber and **Gisela Domej**
- [A thousand pictures say a million words: digitisation and quantitative characterisation of structurally complex glaciogenic rocks](#)
Christoph Kettler, Daniel Le Heron, Pierre Dietrich, Neil P. Griffis, and Isabel P. Montañez
- [Quantitatively deciphering paleostrain from digital outcrops model and its application in the eastern Tian Shan, China](#)
Xin Wang and Feng Gao
- [Application of quantitative structural geology using Terrestrial Laser Scanning \(TLS\) for the stabilisation of the 'Doggerwerk' tunnel system in Happurg \(Franconia, Germany\)](#)
Katrin Heindel, Jochen Wolf, Philipp Chachaj, and Klaus Levin
- [Quantitative structural analysis of fractures using digital outcrop models](#)
Caroline Modica Custódio, Maria Alcione Lima Celestino, Laís Vieira de Souza, Jaqueline Lopes Diniz, Leonardo Campos Inocencio, Juliano Bonato, Aline Fernanda Spaniol, Tiago Siqueira de Miranda, and **Francisco Manoel Wohnrath Tognoli**

Linking the information to processes: Methodologies

- [Three-dimensional depth-to-basement modelling based on seismic and potential field data – basement configuration in the westernmost Polish Outer Carpathians](#)
Mateusz Mikołajczak, Jan Barmuta, Małgorzata Ponikowska, Stanislaw Mazur, and Krzysztof Starzec
- [Extreme values of fold-related shortening in the hinterland structure of the Shilbilisaj section in the Talas Ridge \(Tien Shan\)](#)
Fedor Yakovlev, Krzysztof Gaidzik, Viacheslav Voytenko, and Natalia Frolova

Going back to smaller scales and the virtual world

- [Numerical models of sheath fold development in rheologically heterogeneous rocks of the Cima Lunga-Adula shear zone \(Central Alps\)](#)
Filippo Luca Schenker, Marta Adamuszek, and Matteo Maino
- [Effective rheology of a two-phase subduction shear zone calculated by numerical simple shear experiments](#)
Paraskevi Io Ioannidi, Laetitia Le Pourhiet, Onno Oncken, Philippe Agard, and Samuel Angiboust

And coupling processes...

- [Critical fluid volumes and the start of 'self-sustaining' fracture ascent](#)
Timothy Davis