



GEODYNAMICS @ GRAZ

(Working Group Stüwe)

Annual Report 2018



Department for Earth Sciences
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<http://wegener.uni-graz.at>
<http://www.alpengeologie.org>
<http://luftbildsteiermark.at>

GROUP MEMBERS

Masters Students:

Christoph Pucher (MSc student)
Interest: Morphology of Nil catchment during the Messinian crisis
Graduated in Feb 2018

Thorsten Bartosch (MSc student)
Interest: Neotectonics of the Gurktal Alps
Graduated in June 2018

Konstadin Hohmann (MSc student)
Interest: Neotectonics of Fischbacher Tauern
Ongoing in 2018

Bachelor Students:

Susanne Rosskogler (BSc)
Interest: Strukturgeologie am Hochschwab
Graduated September 2018

Raphael Ziegler (BSc)
Interest: GMT Maps of the world
Graduated in February 2018

Kim Kozac (BSc)
Interest: Schersinn Indikatoren in der Plankogel Abschiebung
Start in summer 2018 – but stopped?

Matthias Gollner (BSc)
Interest: Geometrischer Profil durch den Plattnegneiss /Weinebene
Start in summer 2018 – but stopped.

Florian Kohler (BSc)
Interest: Field mapping of the Plankogel detachment / Slowenia
Start in summer 2018

Max Hessinger (BSc)
Interest: Potential Energie along oceanic transform faults
Start in Fall 2018

Moritz Rabel (BSc)
Interest: River Piracy in Traboch – Evidence from Löss
Start in Fall 2018

Anna Worba (BSc)
Interest: Overprinting in the Plankogel Detachment
Start in Fall 2018

Katrin Lontschar (BSc)
Interest: Neotectonics of southern Saualpe
Start in Fall 2018



Figure 1: (a) With Jörg Robl and Stefan Hergarten at EGU in April. (b) With Thorsten Bartosch and Florian Dertnig at EGU poster. (c) With co-editors at LITHOSPHERE Damian Nance and Sarah Roeske as well as Editorial assistant Bridgette Moore at GSA in Indianapolis. (d) With Paul Fitzgerald and Paul Alaska (POS) at GSA. (e) with Chinese field trip in the Grazer Bergland. (f) With Hauenberger PhD student Niels Frank measuring zircons for Farid Makroum. (g) At the DGF decision meeting in Tübingen in June. (h) Giving a TV interview with Peter Beringer in Vorau.

FUNDED RESEARCH PROJECTS

- Archaeological documentation of potentially stone ages monuments in Styria
Funded by: Hans Adam 2 Fürst von Liechtenstein (in cooperation with Heinz Kusch)
Total funding in 2018: ~ 20.000,-
- Elevated Low Relief Landscapes in Mountain Belts: Active Tectonics or Glacial Reshaping? A Case Study in the Eastern Alps
Funded by: FWF together with Robl/Salzburg (half of the funding in Graz)
Total funding in 2018- 2021: 300.000,-
- Landscape evolution constrained by the intraplate stress field: Direct coupling of tectonics and the influence of biota on long-term geomorphic development in the Chilean Coastal Ranges
Funded by: DFG (a paralleling FWF project over 150.000,- was not funded in Dec. 2018)
Total funding in 2018: 8700,-

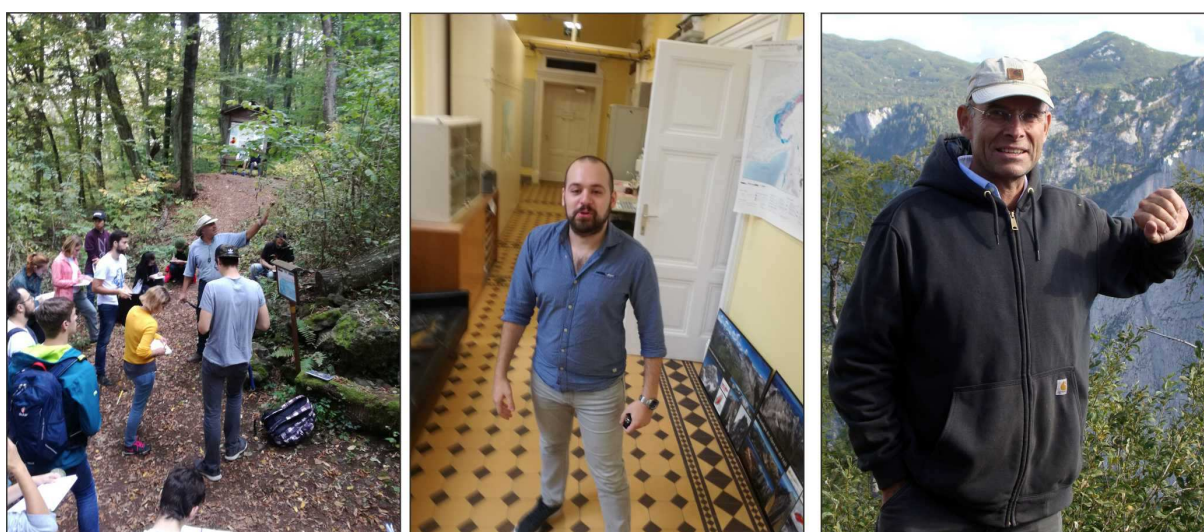


Figure 2: (a) With Christoph Hauenberger during first year field trip in Kapfenstein. (b) Yigit Altintas – the Turkish erasmus student during summer. (c) During the “Stein und Wein Symposium” field trip in August.

SCIENTIFIC PUBLICATIONS

Articles in refereed journals:

- Schorn S., Diener J.F.A., Powell R., Stüwe K., (2018). Thermal buffering on the orogenic crust. *Geology*, <https://doi.org/10.1130/G40246.1>
- Sizova E., Gerya T., Brown M., Stüwe K., (2018). What drives Metamorphism in early Archean greenstone belts? Insights from numerical modelling. *Tectonophysics*. v. 746, p. 587-601. doi.org/10.1016/j.tecto.2017.07.020
- Berg C., Magnes M., Schwager P., Stüwe K., Zernig K., Drescher A. (2018). Einführung in das Exkursionsgebiet Steirische Ostalpen und südöstliches Alpenvorland (Steiermark, Österreich). *Tuxenia*, v. 11, p. 5-9
- Stüwe K., (2018). Geologie der Steiermark. Relevante Aspekte für die Botanik. *Tuxenia*, v. 11, p. 11-31
- Herg A., Stüwe K., (2018) Tectonic interpretation of the metamorphic field gradient south of the Koralpe in the Eastern Alps. *Austrian Journal of Earth Science*, 111/2 p. 1-17. doi: 10.17738/ajes.2018.0010

Abstracts and conference presentations with publication year 2018:

- Stüwe K., Homberger R. (2018). Folding in the European Alps as seen from the air. Geological Society of America. Abstract, Indianapolis. Poster.
- Stüwe K., Bartosch T. (2018) More Evidence for Post Miocene Uplift in the Eastern Alps: A Geomorphic Map for the Gurktal Alps. *Geophysical Research Abstracts*, vol 20., (EGU)
- Sizova, E., Gerya, T. Brown, M., Stüwe, K., Hauzenberger, C., Fritz, H., Faryad, S.W. Overprinting Metamorphic Events During Continental Collision: Insight from Geodynamic Modeling. *Ganulites and Granulites Min Soc of UK*. Edinburgh Abstract.

Public Relations Articles, Talks and Activities:

- Stüwe K. (2018). Die Steiermark von oben. Die schönsten Panorama Bilder unseres Landes. Obersteirischer Kulturbund, Leoben, 5.3.2018.
- Stüwe K. (2018). Reaching the summit: Knowing and comprehending your terrain! Garmisch Partenkirchen for Management Seminars, Mercedes. Three talks in Spring 2018.
- Stüwe K. (2018). Die Erde von Oben. Einmalig geschaffen oder Prozess ständiger Veränderung. 29.9.2018, Schloss Trautenfels. Sonderveranstaltung m mit Exkursion im Rahmen der Landesausstellung Gott und die Welt.
- Hauzenberger C., Kurz W., Schantl P., Sorger D., Stüwe K., (2018). The Variscan and Alpine Orogen in Austria: from UHT granulites to the type locality of eclogite and more... *Exkursionsführer* 14.4.18-20.4.18.

- Stüwe K. (2018). Entwicklung des Steirischen Beckens: Der geologische Rahmen. Stein und Wein Symposium des Universalmuseum Joanneum 29.8.2018. Vortrag in Feldbach.
- Stüwe K. (2018). Geology of the Alps seen from above. Seminar Vortrag Yale University 1.11.2018 Newark.
- Stüwe K. (2018). Sind die spannendsten Berge die gespannten Berge? 24.8.2018 Schnupperuni.
- Stüwe K., (2018). Die Großlandschaften Österreichs. Monsberger Gymnasium 15.9.2018.
- Stüwe K., (2018). Radio interview Lithium. Leichtes Gewicht Millionen schwer. Dimensionen Radiosendung in Ö1 von Ilse Huber. (17.10.2018)
- Stüwe K. (2018). Fernsehfilm von Peter Beringer: Der Naturwissenschaftliche Hintergrund der Menhire im Bereich Vorau. 10.7.2018

EDITED JOURNAL VOLUMES

- Berg C., Magnes M., Schwager P., Stüwe K., Zernig K., Drescher A., (2018). Edelweiss und Gewürztraminer – Vielfalt der Natur- und Kulturlandschaft der Steiermark. Tuexenia. Mitteilunge der Floristischc-soziologischen Arbeitsgemeinschaft Beiheft 11, ISSN 1866-3885, 192 S.
- Drescher A., Stüwe K. (2018). Mitteilungen des Naturwissenschaftlichen Vereins für Steiermark, Band 148. 142 pp... ISSN 0369-1136.

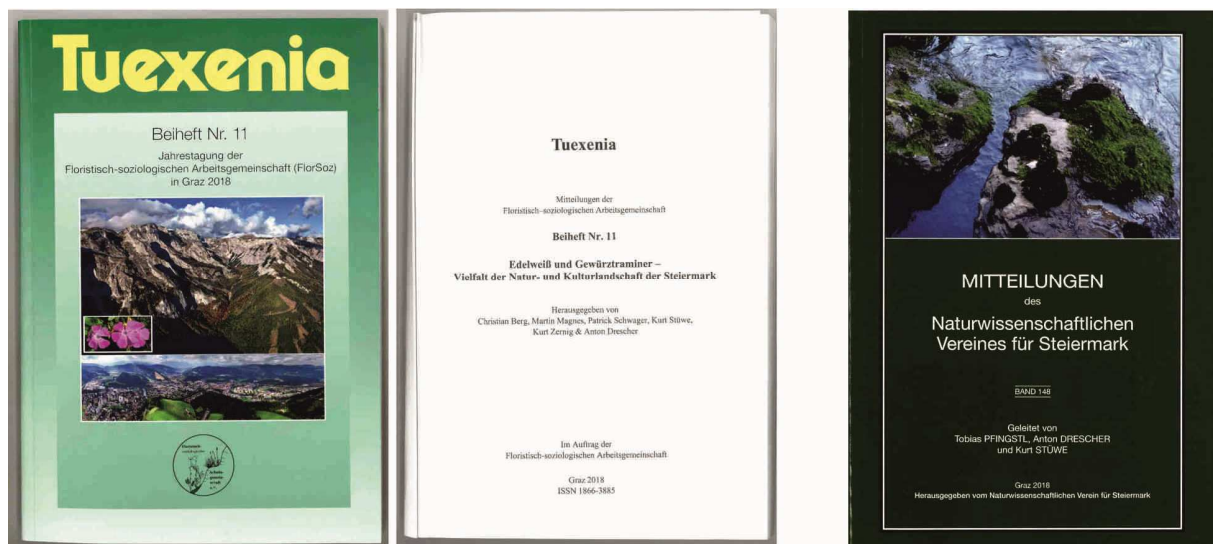


Figure 3: Left and Center: The Special Issue of TUEXENIA from the conference in June. right: The cover of the annual Mitteilungen.

FIELD TRIPS & OTHER WORK RELATED TRAVEL

- Visit to Kitzbühel to plan Chile project with Friedhelm von Blanckenburg (23.1. – 25.1. 2018)
- EGU (8.4.-13.4. 2018)
- Indianapolis GSA conference, Publications committee meetings (16.3. and 4.11. 2018)
- Tübingen DFG Meeting (5.7.-6.7.2018)
- Quedlinburg Conference for Chile project (9.10.-12.10.2018)
- Several Trips to Garmisch Partenkirchen with Mercedes (3 trips in March and April)
- Mainz Berufungskommission Sitzungen (4 trips to Germany between Sept and December)
- Trips to Stein und Wein Symposium, Leoben, Chinese field trip and others as by talk abstracts above)
- Im Rahmen der Lehre: „Geologische 2“ Exkursion im SS „Petrologische 2“ Exkursion im SS, „Erstsemestrigen Exkursion“ im Oktober. Verschiedene kurze Gelände Fahrten mit Bakka und MSc Studenten über das Ganze Jahr. (with Hohmann, Kozak, Gollner, Worba and others)
- Botanik Tagung in Graz

VISITORS

- Visit by Yigit Altintas Ankara University as Erasmus practical (4.7. – September)
- Visit by Prof. Volkmar Wirth, Mainz University (Seminar talk in Graz on 15.5.2018)
- Inas Khan, Mansoura University, Egypt (interested student visiting 2.12. – 8.12.2018)

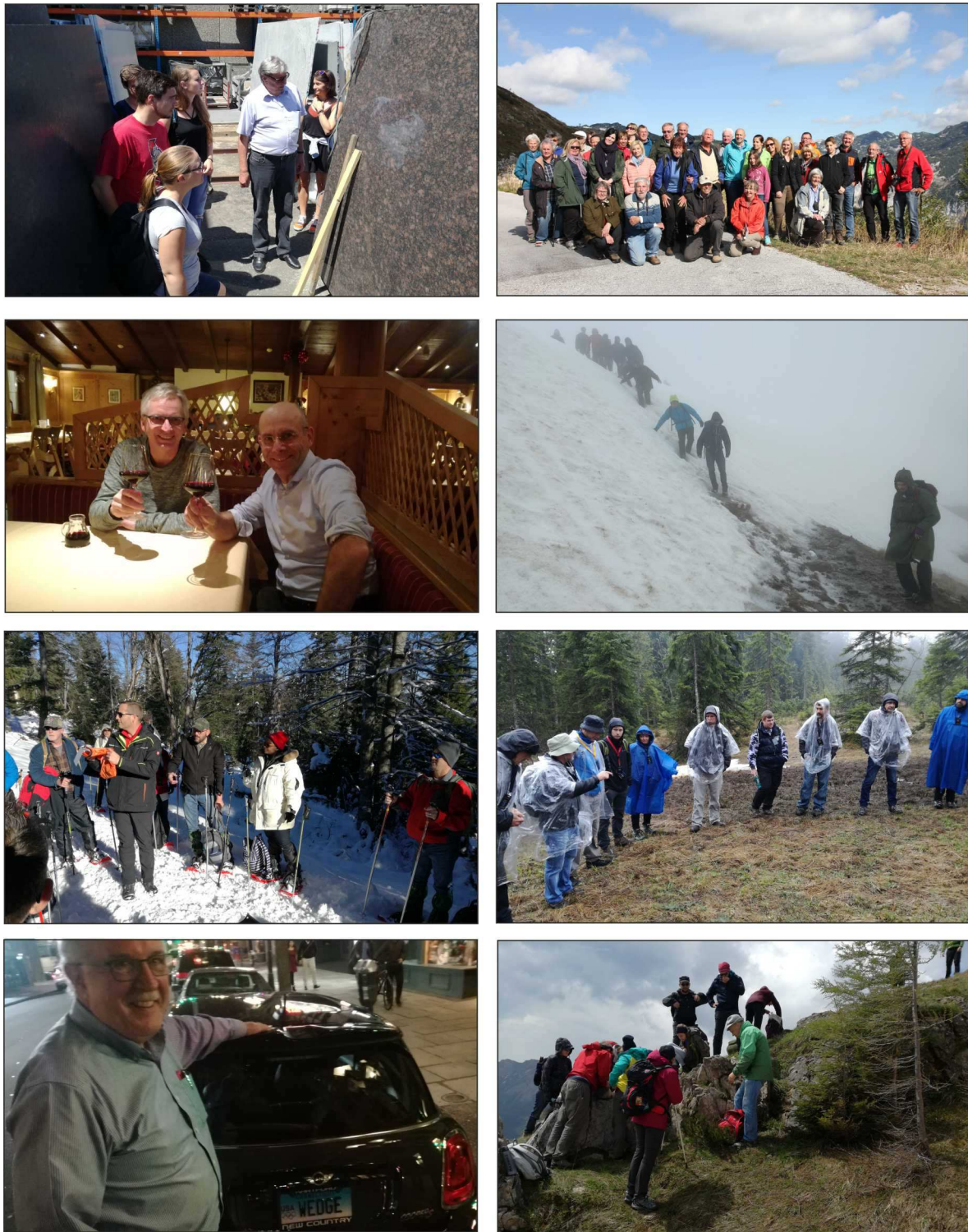


Figure 4: (a) At “Stein von Grein” company in Graz with the course “Kristallingeologie” in June. (b) With the Schloss Trautenfels special event field trip in the Salzkammergut. (c) With Friedhelm von Blankenburg in Kitzbühel - planning the Chile project. (d) With undergraduate field tip in the Koralpe. (e) With the Mercedes event in winter in Garmisch Partenkirchen. (e) Another Mercedes event – this time in summer, but in the rain. (f) Mark Brandon with his “WEDGE car at Yale University. (g) Another undergraduate field trip – this time in the Gleinalpe.

TEACHING AND EDITING ACTIVITIES

EDITORIAL RESPONSIBILITIES

- Lecture Notes in Earth Science (Springer) (Chief Editor)
- Mitteil. des Naturwiss. Vereins für Steiermark (Editor: Earth Sci.)
- Lithosphere (Science editor)
- Publications Committee member GSA (2 meetings in 2018)

EDITORIAL BOARD MEMBERSHIPS

- Journal of the Virtual Explorer (editorial board member)
- Journal of Asian Earth Science (editorial board member)
- Austrian Journal of Earth Science (editorial board member)

TEACHING SUMMER TERM 2018:

- Kristallingeologie (old curriculum, 3rd year)
- Neotectonics (MSc curriculum)
- Geological II Field trip (Präbichl – 1 day)
- Petrology II Field trip (Koralpe – 1 day)

TEACHING WINTER TERM 2018/19:

- Geodynamics of the Lithosphere (MSc curriculum)
- Tectonic Modelling (MSc curriculum)
- Erdwissenschaftliches Seminar (BSc)
- Geodynamik (BSc)
- First Year field trip (with Hauzenberger)

