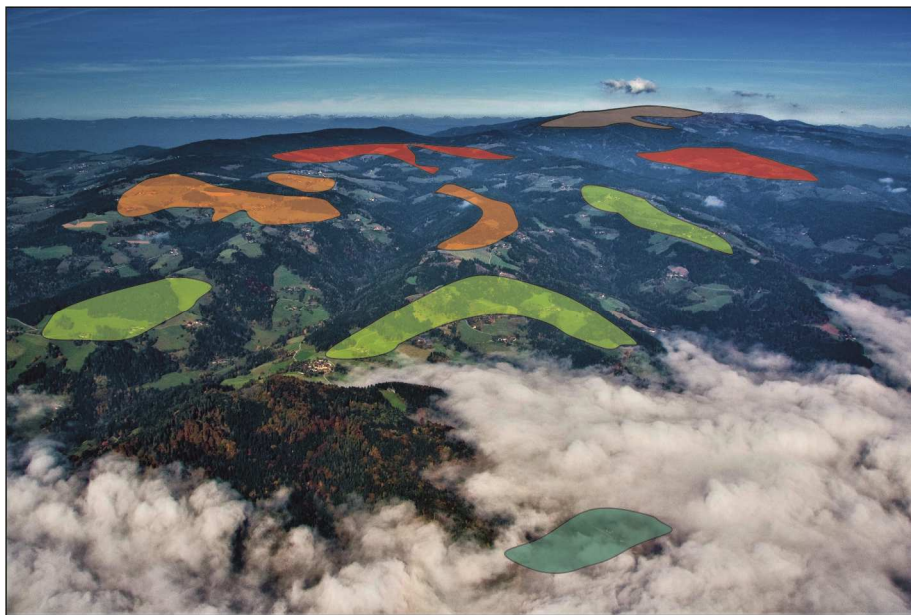




GEODYNAMICS @ GRAZ

(Working Group Stüwe)

Annual Report 2020



Palaeolandscapes of the southern Saualpe

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<http://wegener.uni-graz.at>

<http://www.alpengeologie.org>; <http://luftbildsteiermark.at>

NEW: <https://twitter.com/GeodynamicsG>

Overview:

The year 2020 was dominated by massive restrictions by government- and university to our work. **Teaching** activities involved substantially more work due to being forced to make much of it online, but at least there was abundant university support to make it possible at all. **Research** activities on the other hand, found practically no support by the university. Laboratory work here and in partner laboratories around the world was substantially delayed or not done at all ... and at Graz University the general "stay at home" and "only come to work if you need to" attitude encouraged by the university administration did not provide an incentive to be productive. I know of some colleagues around the world who considered this year to be extremely productive because of this and the peaceful time to write papers, but regrettably it did not work for me and it probably reflected on the group.... ;-(

In addition, the unfortunate year was battered by 3 rejected research grant applications from FWF and KFU with PhD positions (each of which took at least a month to write), an application to ESF and the death of my long-term co-author Hombi. Not a good year! As a consequence, the content of this group-report for 2020 is meagre in comparison to a few years earlier and it was almost not written at all, but here it is....

Kurt Stüwe



Figure 1: Some field activities in 2020. (a) With students during the "Einführende Geländemethoden" course in the Gleinalpe; (b) Kamikaze field work in the dark winter lockdown. (c) With film team and students on the Krippenstein during the filming of a student video. (d) With Prof. Laszlo Fodor during a field trip in the Grazer Bergland.

GROUP MEMBERS

Postdoc

Simon Schorn **(Postdoc)**
Interest: Hydration processes of metamorphic rocks
Start: 1.11.2020 (Selbst Antragsteller FWF)

PhD students

Gerit Gradwohl **(PhD student)**
Interest: Landscape evolution of the Eastern Alps
Start: 1.3.2020 (FWF project ELEVATE)

Masters Students:

Gerit Gradwohl **(MSc student)**
Interest: Neotectonics of the Eastern Alps
Until Feb 2020 (supported by FWF project ELEVATE)

Sebastian Stumpf **(MSc student)**
Interest: Metamorphic field gradients of the Eoalpine Eastern Alps
Start: 1.12.2020 (self supported)

Konstantin Hohmann **(MSc student)**
Interest: Neotectonics of the Fischbacher Alpen
Ongoing in 2020 (self supported)

Bachelor Students:

Max Hessinger **(BSc student)**
Interest: Potential Energie along oceanic transform faults
Finished: March 2020

Moritz Rabel **(BSc student)**
Interest: River piracy in Traboch – Evidence from Löss
Finished: 30.12.2020

Katrin Lontschar **(BSc student)**
Interest: Neotectonics of southern Saualpe
Finished: March 2020

Florian Kohler Ongoing

Margit Taibon Ongoing

Lorenz Buchegger Ongoing

FUNDED RESEARCH PROJECTS

Elevated Low Relief Landscapes in Mountain Belts: Active Tectonics or Glacial Reshaping? A Case Study in the Eastern Alps <http://elevate.sbg.ac.at/>

- **Funded by:** FWF together with Robl/Salzburg (half of the funding in Graz)
Total funding in 2018- 2021: 350.000,-



Figure 2: Field impressions of 2020: (a) Students mapping in the field. (b) With PhD student Gerit Gradwohl taking samples in a cave. (c) Gerit Gradwohl with ELEVATE project partner Lukas Plan in front of the Rettenwandhöhle. (d) Kurt is mapping for the first time in several years himself: The Grazer Bergland Geomorphological map.

SCIENTIFIC PUBLICATIONS 2019

Journal Articles:

- Lontschar K., Stüwe K. (2020). Paleolandscapes of the Southern Saualpe. Mitteilungen des Naturwissenschaftlichen Vereins für Steiermark, v. 150 129-146

Abstracts and conference presentations:

- Stüwe K., Gradwohl G., Bartosch T., Hohmann K., Robl J., Liebl M. (2020). Young Uplift at the Eastern End of the Alps. Evidence for Uplift Unrelated to the Inversion of the Pannonian Basin. EGU2020-18761 <https://doi.org/10.5194/egusphere-egu2020-18761>
- Liebl M., Robl J., Egholm D.L., Stüwe K., Gradwohl G. (2020). The imprint of glacial and periglacial erosion processes on fluvial landscape metrics EGU2020-7587, <https://doi.org/10.5194/egusphere-egu2020-7587>

Public Relations Articles and Talks:

- Stüwe K. (2020). Fast einmal um die Welt. Leoben Kulturbund 4.2.2020
- Seminar in Geoscience: (2020). Der Protolith



Figure 3: Left: "Der Protolith" is a monograph that came out of the "Seminar in Geoscience" BSc course in the winter term 2019/20. Center: The AJES volume 113 is the first volume of AJES entire edited in Graz. Right: Christian Berg and Ursula Brosch sending out the anniversary volume 150 of the Naturwissenschaftlicher Verein für Steiermark during the Christmas break

FIELD TRIPS & VISITORS

Due to government and university restrictions in 2020 just about all scientific exchange and travel was halted. Nevertheless, a few small field trips were possible:

- 360° student video was filmed in the field at Krippenstein in July 28.7.-30.7.
- Laszlo Fodor visited our group 13.-14.1.2020 and gave a talk.
- Hans von Kalkreuth visited Steiermark for three days to plan a Steiermark Geology movie to be taken in summer 2021.
- For the ELEVATE project, Kurt Stüwe sent 10 days in the field for mapping the Grazer Bergland and one week in the Salzkammergut in addition to a series of 1-day field trips for student supervision.

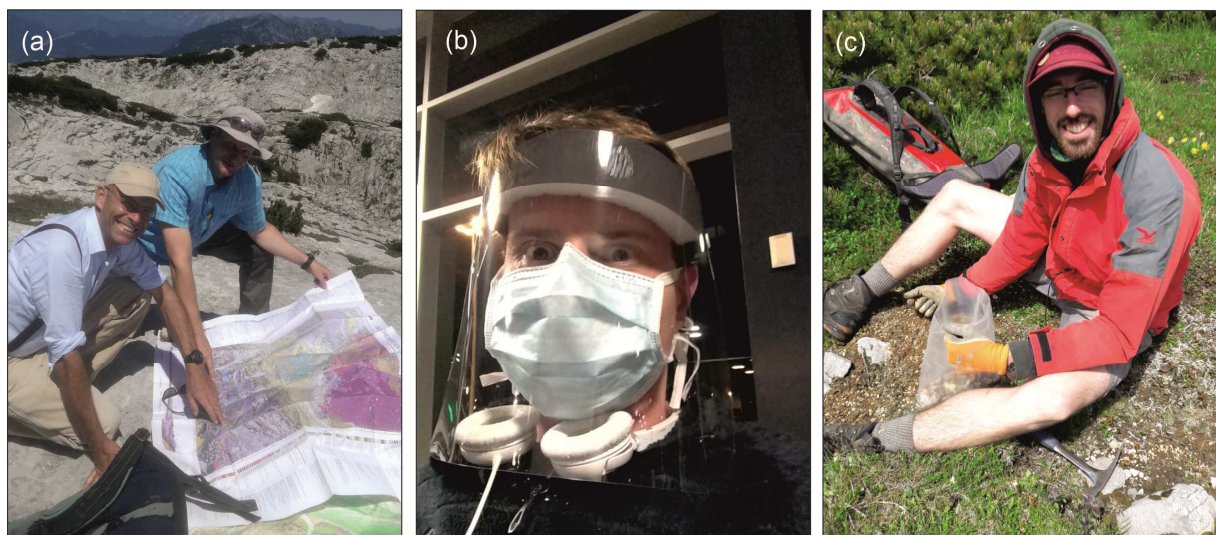


Figure 4: (a) With Gerfried Winkler in the Dachstein Massif. (b) Simon Schorn arrives for his Postdoc from Australia. (c) Gerit Gradwohl is happy in the field.

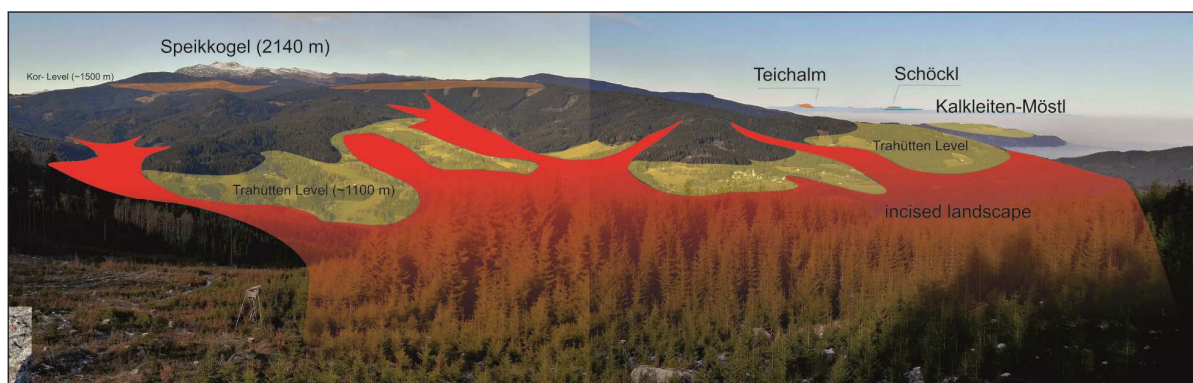


Figure 5: When Petrology meets Geomorphology: View from the Jankitzfels looking north (when you have a minute looking away from the invariant paragenesis at your feet).

TEACHING AND EDITING ACTIVITIES

(All of the below activities suffered badly from government and university restrictions in 2020)

EDITORIAL RESPONSIBILITIES:

- Austrian Journal of Earth Science (Editor since Feb 2020)
The SCI listed Journal of the Austrian Earth Science societies experienced a general "overhaul" with the change of editorship. In 2020 this involve the handling of about 50 manuscripts and 16 published papers and a complete restructuring of (a) the responsibilities and list of associate editors, (b) the editorial board, (c) procedures with the publishers, (d) joining of ÖMG, ÖPG and ÖMG into AJES, (e) implementing an editorial assistant position with Sarah Schaffer and (f) creation of new websites at <https://www.univie.ac.at/ajes/> and <https://content.sciendo.com/view/journals/ajes/ajes-overview.xml>. The new domain www.ajes.at will be active at the start of 2021
- Lecture Notes in Earth Science (Springer) (Editor, but series discontinued)
- Journal of the Virtual Explorer (Editorial board member)

TEACHING SUMMER TERM 2020 (most important courses only):

- Geologie von Österreich (Lehramt, Tutors: Stefan Wald, Paul Unterlass)
- Neotectonics and tectonic geomorphology (MSc curriculum)
- Tectonics of Sedimentary Basins
- Einführende Geländemethoden (BSc curriculum)

TEACHING WINTER TERM 2020/21 (most important courses only):

- Geodynamics of the Lithosphere (MSc curriculum)
- Tectonic Modelling (MSc curriculum)
- Erdwissenschaftliches Seminar (BSc curriculum)
- Geologie der Erde (BSc curriculum with H. Fritz)
- First Year field trip (with Hauzenberger)

DOCTORATE SCHOOL OF EARTH SCIENCE:

Kurt Stüwe is the Head of the Doctorate School of Earth Science at Graz University since summer 2020. See: <https://erdwissenschaften.uni-graz.at/de/doktoratsschule/>



Figure 6: (a) Kurt and Simon taking aerial photography of the field area. (b) With Christoph Huber digging for coal on the Stoderzinken. (c) High powered supervision for MSc student Sebastian Stumpf (at right) by: Simon Schorn, Etienne Skrzypek, Ralf Schuster and Christoph Iglseider. (d) Kurt Stüwe and Simon Schorn find the holy grail of invariant paragenesis at Jankitzfels. (e) Simon Schorn getting right at it. (f) Unhappy Project partner Derek Fabel in Glasgow between lockdown and breakdown. (g) Kurt finds Augenstein gold (regrettably in a gravel pit). (h) Sample preparation at home for breakfast in lockdown times.