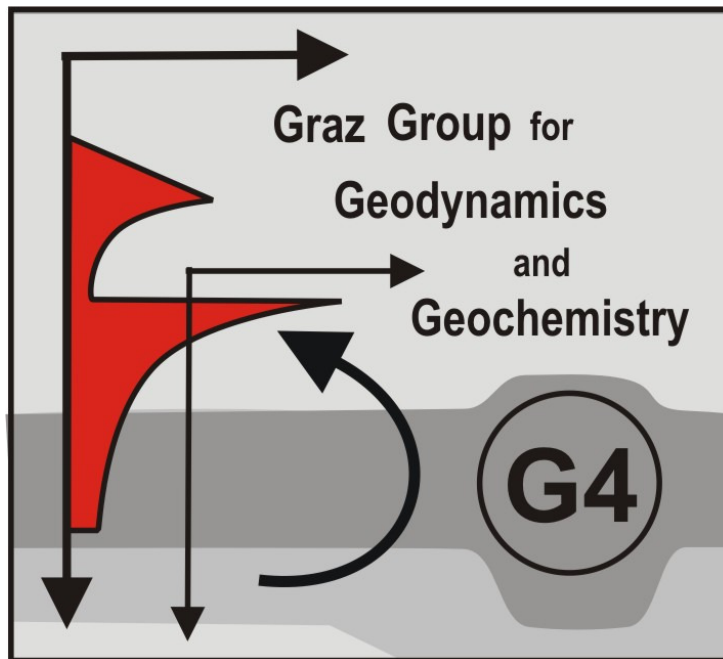


Working Group Stüwe
Annual Report 2007



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

1. GROUP MEMBERS

Kurt Stüwe

Interests: Group leader, Tectonics, Geodynamics, Petrology, Geomorphology
Funded by: Department staff
Contact: kurt.stuewe@uni-graz.at

Jörg Robl (Postdoc 1.1.07 – 31.12.07)

Interest: Combining FEM modelling with landscape evolution models
Funded by: FWF Project P18341 (numerical models for Alps)
Contact: joerg.robl@uni-graz.at

Tamer Abu Alam (PhD student 1.1.2007 - 31.12.07)

Interest: Metamorphic Geology of the Wadi Feiran Belt, Sinai
Funded by: ÖeAD
Contact: tamer.abu-alam@uni-graz.at

Tom Wagner (PhD student 1.1.07 – 31.12.07)

Interest: Neotectonics of orogen – basin transition in Styria
Funded by: GASS Doktorandenkolleg, supervised by: Stüwe, Fritz, Kurz
Contact: Thomas.wagner@uni-graz.at

Emilie Bruand (PhD student 1.10.07 – 31.12.07)

Interest: metamorphism in S-Alaska, eclogite metamorphism
Funded by: FWF project 19366 (tectonic evolution of CMC, Alaska)
Contact: Emilie.bruand@uni-graz.at

Deta Gasser (PhD student 1.10.07 – 31.12.07)

Interest: Structure / geochron S-Alaska, tectonics of Grazer Pal.
Funded by: FWF project 19366 (tectonic evolution of CMC, Alaska)
Contact: deta.gasser@uni-graz.at

Cornelia Roffeis (Masters student 1.1.07 – 31.12.07)

Interest: Barometric constraints on flattening of the Plattengneiss
Funded by: self supported
Contact: c.roffeis@gmx.at

Bachelorstudents:

Lukas Konrad: PROJECT: Structure of Feiran belt in Sinai
 EMAIL: lukas.konrad@aonmail.at

Sebastian Slovacek: PROJECT: Structure of Feiran belt in Sinai
 EMAIL: s.slovacek@gmx.at

Christian Stern: PROJECT: ArAr chronology of feldspar in Plattengneiss
 EMAIL: christian.stern@edu.uni-graz.at

Markus Kaspar: PROJECT: Contact Metamorphism Pohorje
 EMAIL: marku.kaspar@edu.uni-graz.at

Madelaine Hofstadler: PROJECT: Caledonian evolution east Greenland
 EMAIL: madeleine_hofstadler@msn.com

2. RESEARCH PROJECTS WITH FUNDING IN 2007

- Numerical Models for the Eastern Alps

Funding Institution: FWF Project P18341-GEO (PI Robl)
Covered time: 1.1.2007 - 31.12.2007
Total Funding: € 263.000 (€ 60.000 in 2007)
Activity: Postdoc Fellowship Robl, numerical simulation, code development.

- Metamorphic Evolution of Chugach Metamorphic Complex, Alaska

Funding Institution: FWF Project P19366-GEO (PI Stüwe)
Covered time: 1.10.2007 - 31.12.2007
Total Funding: € 285.000 (€ 50.000 in 2007)
Activity: PhD funding Bruand / Gasser. GSA visit and poster presentation, project coordination with Pavlis in ElPaso and Rubatto at Goldschmid (Köln).

- Dynamics of Carbonate Systems

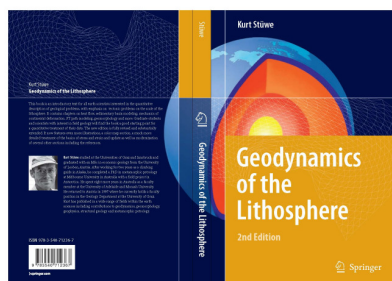
Funding Institution: GASS Doktorandenkolleg (directly to Wagner)
Covered time: 1.1.2007 - 31.12.2007
Total Funding: PhD scholarship Wagner plus expenses (~ € 35.000)
Activity: First full year of PhD Wagner, field work, conferences (DRT, EGU, Pannonian workshop)

- Metamorphic Evolution of Wadi Feiran, Sinai

Funding Institution: OeAD
Covered time: 1.1.2007 - 31.12.2007
Total Funding: PhD scholarship Abu-Alam + Field support to Stüwe
Activity: first field season (February 2007), 1st full year of PhD, phase diagrams, microprobe work

3. SCIENTIFIC PUBLICATIONS

Book: Geodynamics of the Lithosphere 2nd edition 493 pp.



Articles in refereed journals:

- Robl, J., Hergarten S., Stüwe K., Hauzenberger C., 2007. THERMAL HISTORY: A new software to interpret diffusive zoning profiles in garnet. Computers and Geosciences, v. 33, p. 760-772.

Abstracts and Conference Presentations with publication year 2007:

EGU

Robl J., Stüwe, K., Hergarten S., 2007. Is there a Tectonic Control of Drainage Systems in the European Alps? - A Numerical Approach GM151 EGU2007

Robl J., Stüwe, K., Hergarten S., Fritz, H., 2007. Response of Drainage Systems on Himalayan Tectonics Session TS7.1. EGU2007

Robl J., Hergarten S., Stüwe, K., 2007. The migration of watersheds in active orogens: Snapshots from Central Europe and the India-Asia collision Session GM11. EGU2007

Stüwe, K., Robl, J., Hergarten S., 2007. Geometric Relationships between Orogenic Indenters and Drainage Divides: The India-Asia Collision Zone EGU2007

Stüwe K., Fabel, D. Kusch H., 2007. Morphological evolution of the Mur valley, Austria. Constraints from preliminary cosmogenic burial ages. Poster EGU 2007

Wagner T., Stüwe K., Fritz H., 2007. Conspicuous features and their indications for the evolution in the Styrian Basin Poster in session [GM11] EGU 2007

DRT

Wagner T., Stüwe K., Fritz H., Kurz W., Fabel D., 2007. The Evolution of the Styrian Basin in the Neogene – Indications and First Conclusions. DRT abstract volume poster

Stüwe, K., Robl, J., Hergarten S., 2007. Modelling the Influence of Horizontal Advection, Deformation and LateUplift on Drainage Development in the India-Asia Collision Zone DRT Abstract volume

Robl, J., Stüwe, K., Hergarten, S., 2007. Response of Drainage Systems on Orogen Scale Deformation: Snapshots from Ganges and the Rhine Tributaries. Poster at DRT.

GSA

Gasser D., Stüwe K., 2007 The Chugach Metamorphic Complex of southern Alaska: A test for wedge extrusion models? Poster at GSA

Stüwe, K., Robl J., Hergarten S., 2007. Modelling the influence of horizontal advection, deformation and uplift on drainage development in the India-Asia Collision Zone GSA talk

OTHER

Gibson H., Stüwe K., Seikel R., Argast D., Fitzgerald D., McInerney P., Calcagno P., Reid P., Budd A., 2007. Forward prediction of spatial temperature variation for 3D geology models.

Wagner T., Stüwe K., Fritz H., 2008. An Elevation Correlated Map of the Neogene in the Styrian Basin. 2nd intl. Workshop Neogene of Central and South Eastern Europe. Kapfenstein 17.-21.5.2007

Stüwe K., El-Shafei M., Abu-Alam T., Yasser S., 2007. Relationships between the Metamorphic Belts in South Sinai, Egypt. Geology of the Arab world conference Ismailia Dec. 2007

Robl, J., Stüwe, K., Hergarten, S., 2007. Landschaftsentwicklung auf einer deformierenden Kruste. Poster at COG conference, Salzburg

Stüwe K., 2007. Metamorphic field gradients - the best petrological evidence for overpressure we can get ? Goldschmid conference. Cologne, Germany.

Public Relations Articles and activities:

- Stüwe K., 2007. Zur Geologie von Wetzelsdorf 3. Der Bezirkstrommler 27/112 p.10.
- Frauen in der Technik FIT Tag

4. TEACHING AND EDITING ACTIVITIES

EDITORIAL RESPONSIBILITIES

- Tectonics (European Associate Editor)
- Lecture Notes in Earth Science (Springer) (Editor)
- Mitteil. des Naturwiss. Vereins für Steiermark (Editor: Earth Sci.)
- Mineralogy & Petrology (Associate Editor)

EDITORIAL BOARD MEMBERSHIPS

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

EDITED JOURNAL VOLUME

- Drescher A., and Stüwe K., 2007 (eds.) Mitteilungen des Naturwissenschaftlichen Vereins für Steiermark, vol., 135, 84 p.

EXTERNAL REFEREE WORK

- A total of about 12 papers were reviewed for internationally refereed journal and 3 grant proposals were reviewed by Stüwe in 2007

UNDERGRADUATE TEACHING

(only regular weekly course lecturing listed)

Strukturgeologie (2 hours a week winter term)
Einführende Exkursionen (2 days)
Kristallingeologie (2 hours a week)
Lithosphärenprozesse (2 hours a week)
Geodynamics (1 hour a week)

5. ATTENDED CONFERENCES

- EGU Vienna
Time and Place: Wien 15.4.-20.4.07
Attended by Group Members: Stüwe, Robl, Wagner, Roffeis
Number of Presentations: 2 Poster
- Goldschmid Conference
Time and Place: Köln, Germany 21.8.-23.8.07
Attended by Group Members: Stüwe
Presentations: 1 Poster, 1 organised symposium
- Deformation mechanisms, Rheology and Tectonics
Time and Place: ETH Milano 27.9.-29.9.07
Attended by Group Members: Stüwe, Robl, Wagner
Presentations: 1 Talk, 2 Poster
- Asia-Pacific workshop
Time and Place: Salzburg 13.9.-14.9.07
Attended by Group Members: Stüwe
Presentations: 1 Talk
- Pannonian Basin Workshop
Time and Place: Lake Balaton 14.9.-16.9.07
Attended by Group Members: Stüwe, Wagner
Presentations: 1 Talk, 1 Poster
- Geological society of America (GSA)
Time and Place: Denver, USA 27.10.-30.10.07
Attended by Group Members: Stüwe, Gasser
Presentations: 1 Talk, 2 Poster
- Neogene of Central and South Eastern Europe
Time and Place: Kapfenstein 17.-21.5.2007
Attended by Group Members: Wagner, Stüwe
Presentations: 1 Poster

Organised Symposium:

“Timescales of Metamorphic Processes” (together with D. Rubatto and E. Baxter)
 Symposium at Goldschmid conference in Cologne, Germany.

6. SCIENTIFIC EXCHANGE

VISITORS TO RESEARCH GROUP IN 2007

In 2007 the following colleagues visited our research group in Graz:

- **Prof. Richard White** (Mainz Univ. visit to plan Alpine projects)
- **Prof. Friedhelm v. Blanckenburg** (Hannover Univ. to coordinate Topo-Alps)
- **Prof. Fritz Schlunegger** (Bern Univ. visit to coordinate Topo-Alps)
- **Dr. Ralf Schuster** (GBA to visit to write Perm manuscript)
- **Dr. Helen Gibson** (Intrepid Geophysics visit to give course on GEOMODELLER)
- **Dr. Jean-Daniel Champagnac** (Hannover, Bern to discuss topo-Alps)
- **Prof. Chris Wilson** (Melbourne Univ. visit to give talk at NaWi Hauptversammlung)
- **Prof. Roger Powell** (Melbourne Univ. visit to plan projects)
- **Dr. Stephan Matthai** (Imperial College, London. visit for job interview in Leoben)

INVITED TALKS IN OTHER DEPARTMENTS

- Stüwe: 25.2.07: "Heat Sources for the Metamorphism of Rocks. A review." Tanta University EGYPT
- Stüwe: 26.2.07: "Heat Sources for the Metamorphism of Rocks. A review." Ismailia University EGYPT
- Stüwe: 2.11.07: "Mechanical Models for the Alps and Asia" Austin, Texas, USA Department seminar
- Stüwe 1.11.07: "Modelling landscape evolution on a deforming crust". ElPaso Texas, USA Department seminar.
- Stüwe 12.10.07: „Moderne Iden zur jung-tektonischen Entwicklung Alpino-typer orogene“. Graz, AUSTRIA, Berufungsvortrag

OTHER EVENTS IN 2007

After 10 years in a successively decaying building we finally moved in November 2007 from the Mozartgasse building into the Mineralogy and Petrology division of the Earth Science department at Universitätsplatz 2.

Invoked by the new associate Dean (vonGrünberg) working groups had to be defined. A working group for the theme "Geodynamics, and petrology" was formed by Hauzenberger, Stüwe, Fritz, Hoinkes and Unzog with Hauzenberger being the new group leader.

A 1-day short course on using the modelling software GEOMODELLER was given in March by Helen Gibson of Intrepid Geophysics (Melbourne) in our department.