

## A new Research Training Group? Review of ProTiP on March 14th

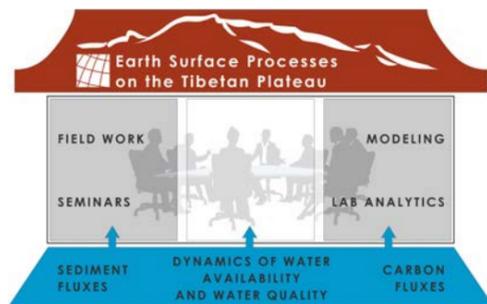
Inspired by the successful work of both TiP and CAME, a DFG research training group proposal was initiated. Speakers of „ProTiP - Earth Surface Processes on the Tibetan Plateau“ are Antje Schwalb (TU Braunschweig) and Georg Guggenberger (Leibniz Universität Hannover).



The scientific goal of ProTiP is to (a) track and quantify rates of short- to long-term sediment movement and transport with

high resolution, to (b) identify patterns of organic carbon storage in soil and associated CO<sub>2</sub> efflux to the atmosphere, and to (c) simulate present, past and future water balances and their biological and chemical mass budgets. The catchment of Nam Co, will serve as a key natural laboratory.

The ultimate goal is to train students in geo-ecological process analysis as prerequisites for sustainable environmental management by merging basic and applied research approaches. The qualification program is characterized by joint Sino-German fieldwork using the monitoring and research station NAMORS. Joint laboratory work, different modeling approaches, and an interdisciplinary course program will train process- and system-oriented comprehension, critical thinking, creativity, and originality.



## Editorial

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## EGU meeting 2014

The European Geosciences Union General Assembly takes place in Vienna on 27 April - 02 May. For the first time, the EGU meeting will have a theme: „The Face of the Earth - Process and Form“. A Central Asian subject is represented by the session CL2.7 „Evolution of the Asian Monsoon over millennial and longer timescales“ (co-convener Sushma Prasad), which discusses recent advances in the reconstruction and modelling of the Asian monsoon both in East and South Asia and its impacts on landscape, tectonics and orogenic evolution. A special emphasis is on newer high resolution studies of the Quaternary monsoon and its impacts on the development of early human societies. A EGU splinter meeting (SPM 2.14) „DFG PP 1372 - Monsoonal dynamics in High Asia on different spatial and temporal scales“ will be held on April 29 (convener Frank Lehmkuhl). Furthermore, there will also be a TPE session: „The third Pole Environment - Observation and modelling of hydro-meteorological processes in high elevation areas“.

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Dear friends and colleagues,

the third edition of the joint CAME-TiP-newsletter focuses on field campaigns: Field work on the Tibetan plateau and the adjacent mountain ranges and sedimentary basins of Central Asia is associated with extraordinary challenges because of the remoteness of the area, the high altitude and the extreme climate, combined with very limited infrastructure. Nevertheless, and often due to the engaged support of our Chinese partners, the project groups were successful in conducting their field campaigns collecting large amounts of data and samples, even though the planned schedule or working locations had to be modified because of unforeseen conditions. The results of CAME and TiP were presented on numerous international conferences, such as the AGU and EGU meetings; further sessions are planned for this year's meetings.

Members of the Summer School in Nepal



Aside from research, the support of early career scientists plays a prominent role through joint summer schools and workshops. This importance is also reflected in the proposed DFG Research Training Group ProTiP, that is designed as a bilateral German-Chinese Graduate School. TiP as well as the first phase of CAME come to an end this year. Therefore we hope to get together with all of you in order to discuss and plan possible future activities on the Tibetan Plateau and the wider central Asian region.

Yours,

Volker Mosbrugger



Erwin Appel



## 3rd Annual CAME- Meeting in Frankfurt, March 06 & 07, 2014

On the 3rd meeting, researchers will report about results, products and perspectives of their projects. Three years of research allow for a more profound presentation upon the so far collected findings, possibly necessary readjustments of procedures and for a more detailed reflection on the possibilities arising from each of the projects. For the first time, a poster session gives the opportunity to present single projects in more details. As for the general impact of the project, members of the ten joint project groups will gather in workshops and share their considerations in a joint discussion.

## HKT-ISTP-2013 in Tübingen, August 2013

In August 2013, a joint conference took place in Tübingen, Germany: The 28th Himalayan-Karakorum-Tibet Workshop and the 6th International Symposium on Tibetan Plateau. Following the talks by Paul Kapp, Tandong Yao, Gerard Roe and Andreas Mulch in the joint opening session, sessions on the two major themes, geodynamics and climate, hydrology, cryosphere & ecosystems took place. Nearly 200 Scientists from 21 countries enjoyed the numerous talks, posters and discussions as well as beautiful Tübingen.



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## Field Work: Achievements and (unexpected) challenges

Field work is often the most challenging, but also the most rewarding part of research. In Central Asia, researchers can enjoy the vast and beautiful landscapes - but its remoteness also causes challenges such as e.g. concerning transportation of both people and equipment. In several cases, fieldwork was delayed before it even started due to visa complications, or on-site due to fears or scepticism of locals. Nevertheless, the researchers were able to collect a lot of data - as well as many impressions, pictures and stories...

### TIPTIMON: Climate- vs. Earthquake-induced Rock Glacier Advances in Tien Shan



Taking samples on a rock glacier...

The occurrence of large rock glaciers in the vicinity of historical earthquake surface ruptures makes rock glaciers an ideal study object to investigate whether such large-magnitude earthquakes can influence rock glaciers via lateral material input from coseismic mass wasting. The underlying hypothesis is that the dynamics and location of rock-glacier lobes in the study area may be controlled by earthquakes more than palaeoclimatic fluctuations. Integration of remote-

sensing and terrestrial Light Detection and Ranging (LiDAR) allows measuring rates of rock glacier advance at spatial and temporal scales. Regional mapping and lichenometric dating of particular rock glacier lobes should clarify whether the advance states are coupled to distinct earthquake events or to more gradual climatic changes. Studying the rock glaciers in the field requires not only physical fitness, but in some instances also an absence of fear of heights...



... and crossing a river.

### PaDeMoS: Development of a Multi-Proxy Pasture Development Monitoring System in Response to Environmental Changes

PaDeMoS compares the effects of grazing in the various climatic regions of Tibet, which range from meadows to alpine semi-desert. Core indicators for the condition of grazing lands can be seen in higher plants, small mammals and ants, all of which are being studied in PaDeMoS. With collected data



Plant trait investigation in the field

from pollen traps, changes in vegetation over longer time scales can be studied continuously. Species composition and population density are investigated for small mammals and ants. Vegetation is studied using both direct observation in the field and remote sensing. The research suffered a number of setbacks, caused by humans and weather. Data collection was made difficult due to stolen appliances, storms blowing away study sites and heavy rainfall distorting data. Nevertheless, nearly 3000 plant specimens were collected and

determined. The evaluation and interpretation of hundreds of samples from a vast area with different geological, climatical, and other environmental factors is still underway. The identification of hundreds upon hundreds of pollen samples - although done in the lab - still requires endurance as well as a vast knowledge of all sorts of pollen.



A pollen trap at Linzhi Station on the Eastern Tibetan Plateau



A trapped and marked pika

## CLASH – Climate Variability and Landscape Dynamics during the Late Holocene cooperating with TIP - Monsoonal variations and climate change during the late Holocene derived from tree rings and glacier fluctuations



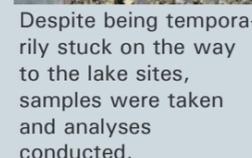
Camping in the rain...

Trees are a spatial and temporal highly resolved environmental archive. Glacier and monsoon dynamics are reconstructed from tree-ring width, tree-ring density and stable oxygen isotopes, within the joined TiP-CAME project. The highly effective sampling methodology requires a proper physical fitness. Monsoonal rainfalls, straining hikes and camping in pathless, primeval forests together with quarreling 'local inhabitants' (macaques) ensure a rich variety of non-scientific experiences.



...and taking tree ring samples - in the rain!

## TiP - Reconstruction of Asian monsoon in Tibetan lake systems based on microfossils and compound-specific isotope signals of biomarkers



Despite being temporarily stuck on the way to the lake sites, samples were taken and analyses conducted.

In order to reconstruct the late Quaternary Monsoon dynamics on the Tibetan Plateau, stable isotopes, terrestrial and aquatic biomarkers, and ostracods are used to reconstruct the hydrology of individual lake systems. <sup>14</sup>C measurements allows the comparison of the timing of events in different lakes. The gained knowledge about the underlying climatic and ecological processes is then used on sediment cores to interpret lake system changes in the past and thus monsoon dynamics. Reaching the study sites posed the first problem, as some



Installation of the UWITEC drill platform for taking long cores at Tangra Yumco.



A group of Tibetans is very interested in the rubber boats.

roads proved difficult to travel due to heavy rainfall. Choosing the right camp and data collection site was not always easy, as winds and currents on the lake can render the data collection quite difficult. In one case, permit to enter the lake was denied, in other sites however, the research was observed with much interest.

## Upcoming conferences and workshops

DynRG-TiP/WET combined conclusion meeting, 18.-22.3.2013, Ramsau, Austria

Sino-German Workshop & conclusion colloquium DFG-SPP 1372 - TiP, 10.-11.12.2014, Berlin

29. Himalayan Karakoram Tibet Workshop (HKTW), 2.-4.9.2014, Lucco, Italy