

Sediment transport in the proglacial Fagge River (Kaunertal/Austria)

**DAVID MORCHE¹, FLORIAN HAAS², HENNING BAEWERT¹,
TOBIAS HECKMANN², KARL-HEINZ SCHMIDT¹ & MICHAEL BECHT²**

¹ Institute for Geosciences and Geography, Martin-Luther-University Halle-Wittenberg, D-06099 Halle/Saale, Germany

david.morche@geo.uni-halle.de

² Catholic University of Eichstaett-Ingolstadt, Department of Physical Geography, Ostenstr.18, D-85072 Eichstaett, Germany

Abstract The fluvial system in proglacial areas is more-or-less continuously fed with sediment by glacial melt water and infrequently supplied with sediment by landslides, debris flows, rock fall or fluvial transport from the coupled slopes. A part of the sediment input is temporarily stored in intermittent sinks (river bed, bars, braid plains). These stores can be reworked and then become sources for fluvial sediment transport during floods. Sediment transporting processes are highly variable in both the temporal and spatial scale. In consequence of this high variability, field-data based detailed knowledge of sediment fluxes and the interrelated geomorphological processes in proglacial areas is lacking. The present work is part of the research project “High-resolution Measurements of Morphodynamics in Rapidly Changing Proglacial Systems of the Alps”, that is set up in the Kaunertal, Austrian Alps. The project is focused on the quantification of fluvial sediment transport. Suspended sediment load and bed load are measured at different locations in the proglacial Fagge River. Surface changes of sediment sources are quantified by a comparison of multi-temporal terrestrial and airborne laser scanning data.

Key words proglacial; sediment transport; bed load; terrestrial laser scanning; Kaunertal, Austria