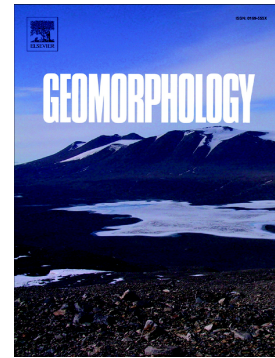


Accepted Manuscript

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PII: S0169-555X(18)30141-7
DOI: doi:[10.1016/j.geomorph.2018.03.029](https://doi.org/10.1016/j.geomorph.2018.03.029)
Reference: GEOMOR 6371
To appear in: *Geomorphology*
Received date: 5 August 2017
Revised date: 29 March 2018
Accepted date: 31 March 2018

Please cite this article as: F. Lehmkuhl, V. Nottebaum, D. Hülle , Aspects of late Quaternary geomorphological development in the Khangai Mountains and the Gobi Altai Mountains (Mongolia). The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Geomor(2017), doi:[10.1016/j.geomorph.2018.03.029](https://doi.org/10.1016/j.geomorph.2018.03.029)

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Aspects of late Quaternary geomorphological development in the Khangai Mountains and the Gobi Altai Mountains (Mongolia)

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Keywords: arid geomorphology, alluvial fans, luminescence dating; Gobi Desert

Abstract

The reconstruction of geomorphological processes as a result of environmental change is approached by investigating and dating some fluvial, aeolian and lacustrine archives at specific locations that form a N-S basin and range transect across the Khangai Mountains south to the eastern Gobi Altai mountains in Mongolia. Geomorphological processes varied a) spatially with different climatic conditions and vegetation cover in relation to different elevation and latitude and b) temporally due to climatic shifts during the late Quaternary. In total, 15 sections from three distinct sub-regions along that transect were dated by 22 OSL ages. The Khangai Mountain sub-region exhibits mainly late Glacial to Holocene aeolian silty to sandy cover sediments mainly in the upper catchment reaches (>1,800 m a.s.l.). Sections in the northern and central Gobi represent river terraces and alluvial fans in basin areas as well as aeolian sediments in the mountains above 2,200 m a.s.l.. The oldest terrace surface found in this study (T2; NGa1) dates to the penultimate Glacial cycle. The T1 terrace surfaces, on the northern Khangai Mountain front and in the central Gobi sub-region yield a maximum accumulation during the global Last Glacial Maximum (gLGM) and late Glacial time. During the gLGM phase represents rather sheetflow dominated transport built the alluvial fans and in late Glacial times the sediments exhibit more debrisflow controlled accumulation. Incision, forming the T1-terrace edges is

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