Geophysical Research Abstracts, Vol. 9, 07358, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-07358


# Range Scale Pattern of Denudation along the Ruby Mountains/East Humboldt Range, Nevada, USA; new insights from low-temperature thermochronology.

**W. Krugh** (1), A. Densmore (1,2) and D. Seward (1)

(1) Institute of Geology, ETH Zürich, Switzerland (2) Now at the Department of Geography, Durham University, UK (krugh@erdw.ethz.ch / Phone: +41 44 632 82 53)

Normal fault arrays grow through the interaction and linkage of neighboring fault segments. This mechanism of fault growth leads to variations in range-scale patterns of fault displacement and displacement rate as well as of spatial differences in the timing of fault initiation and growth. Low-temperature thermochronology can be used to constrain these aspects of footwall evolution and lead to a better understanding of such range-scale denudation patterns. In this study, we present new data from the Ruby Mountains/East Humboldt Range of eastern Nevada, USA which is a Basin and Range footwall bound on its western flank by the Starr Valley/Lamoille Valley fault array and on its eastern flank by the Clover Valley and Ruby Valley fault systems. Apatite fission track and apatite (U-Th)/He analysis, on both along-strike and vertical transect samples, constrain footwall evolution and provide new insights into the resulting pattern of range scale denudation. These datasets will allow us to investigate the relative influence that each normal fault array places on both catchment development and the overall position of the drainage divide.