Geophysical Research Abstracts, Vol. 7, 04999, 2005 SRef-ID: 1607-7962/gra/EGU05-A-04999 © European Geosciences Union 2005



## **Evolution of geomorphometric parameters in fault zones : The Scotts Mills and Milton-Freewater seismic areas, Oregon**

D. Amorese, M. Font and JL Lagarde

Lab. Coastal and Continental Morphodynamics, MC2, CNRS/Universite de Caen (Daniel.Amorese@geos.unicaen.fr/+33 231565757)

From 10 m digital elevation models, geomorphometric parameters have been automaticaly computed for two well-recognized active fault zones in Western and Eastern Oregon, in the epicentral areas of the Scotts Mills and Milton-Freewater earthquakes, respectively. Results show that Drainage Basin Density and Total Basin Relief are varying parameters accross major faults of the study regions. These observations, among others, allow us to strengthen and refine the supposed locations of the source faults (Scotts Mills Fault and Umapine Fault) of the two earthquakes. Nonparametric statistical tests reveal the influence of lithology on geomorphometric parameters. Nevertheless, this study shows that some geomorphometric parameters can be successfully analyzed to infer the location of active faults. Thus, geomorphometry can represent an additional and efficient tool for seismotectonic studies in active intraplate areas.