



## **Morphometric analysis of El Salvador Fault Zone. Implications to the tectonic evolution. Central America.**

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It is considered that the study of the recent topography development, and the use of geomorphological indexes are good tools for the quantification of the active tectonics. We have used quantitative geomorphology in order to improve our understanding of the recent activity and tectonic evolution of the El Salvador Fault Zone (ESFZ); an E-W oriented strike-slip fault zone that extends 150 km through El Salvador (Martínez-Díaz et al. 2004). Previous studies propose a transtensive tectonic regime at the Central America Volcanic Arc in El Salvador, which induces relative vertical motions on the faults within El Salvador Fault Zone (i.e. Álvarez-Gómez et al., 2008, Cáceres et al. 2005,). This relative vertical displacement can be quantified with the use of hypsometry as a geomorphological character.

The morphometric analysis done contributes to a better understanding of the ESFZ. We have defined km scale tectonic block relative displacements that may be useful to constrain the strain distribution along the ESFZ, length of segments with homogeneous vertical movements and lateral relay of active structures. This study supports the hypothesis of a recent migration in the maximum shortening direction, and the accommodation of the current deformation through the reactivation of pre-existing structures inherited from a previous tectonic frame. A similar tectonic evolution as described Weinberg (1992) in Nicaragua, is interpreted from the results of this study.