



## **Morphotectonic of eastern Tithonium Chasma, Mars.**

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We carried out a morphotectonic investigation in the easternmost part of Tithonium Chasma trough (Mars) by using the energy of relief (Er) analysis integrated with the analysis of high resolution HRSC images. The application of this simple geomorphic marker on Mars is particularly favourable because of the relatively uniform wind-driven erosion. Er distribution of the study area was computed by subdividing surface into square cells of 1 km<sup>2</sup>; the highest and the lowest elevations for each cell were obtained from the topographic maps based on HRSC and MOLA data. Data analysis highlighted three major points: (i) The lower altitude parts of the opposite chasma walls shows different Er values, (ii) there is a general increasing trend of Er values toward North and (iii) Lineaments high Er where found along the bottom of the Chasma, often coinciding with lineation visible in the imagery. Our results suggest that in the study area a “younger” or less intense tectonic activity is prevalent in the northern walls compared to the southern walls of the studied structure, and that tectonic activity generally increase toward north. The two main trends of lineation observed on the Chasma bottom have been interpreted as tectonic faults.