Geophysical Research Abstracts
Vol. 14, EGU2012-7386, 2012
EGU General Assembly 2012

A GIS tool for Integrated Hazard Evaluation on the faults of Mt. Etna (Sicily)

G. Barreca (2), A. Bonforte (1), and M. Neri (1)

(1) Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Catania, Catania, Italy (alessandro.bonforte@ct.ingv.it, +39 095 7165826), (2) Università di Catania, Dipartimento di Scienze Biologiche Geologiche ed Ambientali, Catania, Italy

A pilot GIS-based system has been implemented for the assessment and analysis of hazard related to active fault systems affecting the eastern and southern flanks of Mt. Etna. The system structure was developed in ArcGis® environment and consists of different thematic datasets that include spatially-referred arc-features and associated Database. Arc-type features, geo-referred into WGS84 Ellipsoid UTM zone 33 Projection, are represented by the four fault systems that develop in the analyzed region and other vector layers (i.e. the main lifelines) specifically added for the hazard evaluation. In any case, the backbone of the GIS-based system is constituted by the large amount of information which was stored and properly geocoded in a digital database. This consists of thirty alpha-numeric fields which include all fault parameters available from literature such us length, location, slip rate etc.
Although the system has been constructed according to the most common procedures used by GIS developer, the architecture and content of the Database represent a powerful tool in modeling hazard at Mt. Etna. On the other hand, layering different geographic information and managing Database (topological querying) achieved information can easily and quickly be represented in a great diversity of hazard and vulnerability maps which can be produced following the implementation of specific predicting models.