Geophysical Research Abstracts,
Vol. 10, EGU2008-A-06959, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-06959
EGU General Assembly 2008
© Author(s) 2008

SISMA project - Seismic Information System for Monitoring and Alert - present-day surface tectonic stress field at the regional scale in the Tyrrhenian area

R. Splendore (1), A. M. Marotta (1), R. Barzaghi (2), A. Borghi (2) and L. Cannizzaro (2)

(1) Università di Milano, Dep. of Earth Sciences "A. Desio", Sec. of Geophysics, Milan, Italy. (2) DIAR - Milan (Italy)

SISMA project started on January 2007 and aims to define a “Seismic Information System for Monitoring and Alert” in Italy, trying to overcome the classical approach, based on the analysis of historical seismicity, by the synergic use of seismicity, geophysical forward modeling, geodetic and DinSAR data, both at regional and local scale. The results of a finite element model, by which the present-day surface tectonic deformation and stress fields are reconstructed at the regional scale in the Tyrrhenian area, are presented. Model predictions are compared to GPS data, to test the reliability of our model reconstruction. Focusing on the triangular areas CAGL-LAMP-NOT1, CAGL-NOT1-AQUI and NOT1-AQUI-MATE, defined by permanent GPS stations, a rather high agreement is found between modeled and observed compressive component of horizontal stress, while extension is underestimated. Our analysis supports the hypothesis that in the southernmost part of the Tyrrhenian area the Africa-Eurasia convergence is the major mechanism responsible for the average surface deformation. The agreement between GPS data modeled predictions decreases toward the north of Italy, indicating that other mechanisms concur to control the regional deformation field.