Geophysical Research Abstracts,
Vol. 11, EGU2009-1775, 2009
EGU General Assembly 2009

Study of recent crustal kinematics along the Gulf of Suez, Egypt

A. S. Mohamed, S. Mahomud, and N. Abu-Ali

National Research Institute of Astronomy and Geophysics, Geodynamics, Helwan, Cairo, Egypt (abdel_monem@yahoo.com, 202 554 8020)

Abstract The subject of the research work is dealing with the use of GPS and seismological data for the investigation of recent crustal kinematics for geodynamical studies along the Gulf of Suez. The collaborative effort is extended to use GPS observations to assert the present tectonic features in the study region. The earthquake activity is relatively higher in the southern part of the Gulf and gradually decreasing northward. The high seismicity is mainly attributed to the presence of Sinai triple junction. GPS observations along Gulf of Suez controlled by the IGS permanent stations around the study region. On average, the survey data indicated the motion varies between 1 to 5mm/yr. The detected motions reflect the general trend movement of the Sinai Peninsula. Moreover, the deformation analysis indicates that the entire Gulf of Suez is predominated by extensional deformation in southern part. The obtained extensional deformation style is obviously decreased from south to the north that is consistent with earthquake distribution and regional tectonics models. Earthquake focal mechanisms in the Gulf of Suez have been predominated by normal faulting with left-lateral strike slip components that is consistent with regional tectonics. The extension axes derived from fault plane solutions are oriented in NNE-SSW direction in a good agreement with current stress field from borehole breakouts along the Gulf of Suez. Moreover, the recent GPS results are highly consistence with the obtained extension direction.