Geophysical Research Abstracts,
Vol. 11, EGU2009-5361, 2009
EGU General Assembly 2009

Design and optimization of a GPS network for fault studies

l. karimi dehkordi (1) and Y. DJamour (3)

(1) National Catographic Center, tehran,iran(karimi-l@ncc.org.ir), (2) B. Vosooghi ,Khajeh Nasir university of technology,tehran,iran, (vosoghi@kntu.ac.ir), (3) Y. Djamour , National Catographic Center,tehran,iran(y-djamour@ncc.org.ir)

Abstract

In this paper a monitoring GPS network has been designed for Bam Fault in order to estimate the fault-model parameters, slip-rate and locking-depth, as accurately as possible. we integrated geological constraints to the optimization problem which limits site locating, and optimization algorithm should search only some places which are stable enough for setting GPS stations up. The optimization tool is the Genetic Algorithm based on the principle of genetics as an intelligent method which gives the capacity of defining combined objective functions to optimize the network for various applications. The examples show that changing the stations position improve the parameter accuracy from 16.1mm/yr to 1.2mm/yr for slip-rate and from 8.1km to 1.3km for locking-depth.
Keywords: Fault model, Genetic Algorithm, Geological constraints, monitoring GPS network, optimization