Geophysical Research Abstracts, Vol. 9, 05106, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-05106

New Robust automatic Earthquake Locations for the Italian Region

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Since 2005 we started testing EarthWorm as a parallel system for acquisition and data processing of the INSN (Italian National Seismic Network). We exploited the capability of the system to be modular and easily tuned to develop some improvements with the aim of getting more accurate hypocenter locations for earthquakes occurring in the Italian region. A genetic algorithm has been implemented to define the picking parameters for each station by using manual picks from the INGV Earthquake Bulletin. Then we have developed a new EW module to run the probabilistic, global-search location algorithm NonLinLoc (www.alomax.net/nlloc) in parallel with or as a replacement to Hypoinverse. These efforts enanched EarthWorm's capabilities for reliable and fast hypocentral determinations.. We will present locations results using the new EW system and compare them with other automatic and manually revised locations.