



## Testing the New INQUA Intensity Scale in Greek Earthquakes

A. Fokaefs and G.A. Papadopoulos

Institute of Geodynamics, National Observatory of Athens, Athens, Greece (anna@gein.noa.gr / Fax: +30210-3490165 / Phone: +30210-3490165)

The new INQUA seismic intensity scale is an important challenge in the fields of macroseismology and earthquake geology. Therefore, testing of the new scale is of critical importance with the aim to calibrate the scale, to compare it with conventional scales as well as to improve it. Such testing has been attempted in particular cases of Greek earthquakes selected on the basis of some certain criteria that maximize the prospects for successful testing. More precisely, the selected earthquakes have in common that they were strong and their macroseismic effects included not only damage in buildings and other structures but also ground failures of several types like local landslides, rock-falls, ground fissures and soil liquefaction. In addition, the macroseismic fields of the selected earthquakes were studied and intensities in conventional scales were assessed during post-event field surveys undertaken by the authors. As a consequence, the observational material is reliable and detailed enough and, therefore, provides a good basis to test the new INQUA seismic intensity scale. On the basis of the above criteria we selected to test intensities related with the next earthquakes: Kyllini, NW Peloponnese, 16 October 1988 ( $M_s = 5.8$ ), Athens, Attika, 7 September 1999 ( $M_s = 5.9$ ), Lefkada island, Ionian Sea, 14 August 2003 ( $M_s = 6.3$ ). An inventory of macroseismic effects as well as of conventional intensities has been created for each one of the studied earthquakes. On the basis of the macroseismic effects inventory intensities in the new INQUA scale were determined. A comparison between the conventional and new intensities has been made and the results are evaluated as regards the efficiency and possible future improvement of the new INQUA scale.