Geophysical Research Abstracts, Vol. 8, 07453, 2006
SRef-ID: 1607-7962/gra/EGU06-A-07453

AETNATOMO: a passive seismological experiment at Mt. Etna to improve the resolution of volcanic structure and to define the magmatic regions source of seismo-volcanic signals.

D. Patanè (1), G. Saccorotti (2), C. Chiarabba (3), L. Zuccarello (1) and AETNATOMO Scientific Team (1,2,3,4)

(1) Istituto Nazionale di Geofisica e Vulcanologia - sez. di Catania, (2) Istituto Nazionale di Geofisica e Vulcanologia - Osservatorio Vesuviano. Napoli, (3) Istituto Nazionale di Geofisica e Vulcanologia - C.N.T. - sez. di Roma, (4) Istituto Nazionale di Geofisica e Vulcanologia - Osservatorio di Gibilmanna - C.N.T. - sez. di Roma (zuccarello@ct.ingv.it / +39 095 7168518)

Mt. Etna is one of the most active and investigated volcanoes in the world. The last two decades have represented a time period characterized by a great variety of eruptions and by a large data acquisition, both instrumental and from field surveys. Since 2000 new modern techniques of volcano monitoring have been also implemented (e.g. installation of several digital broad-band stations and of a GPS permanent network) in order to mitigate the volcanic hazard. However, despite the significant advance of these last years in the reconstruction of a complex structure such as the interior of Mt. Etna volcano, more detailed information are still necessary to obtain high resolution images of both its shallow crustal structure and deep roots, including the plumbing system and the faulting zones. Consequently, at the end of June 2005 we have carried out a passive seismological experiment named AETNATOMO, during which a temporary array of 23 digital broad-band seismic stations and two seismic antennas were deployed around the volcano and near its top, respectively, to integrate the permanent seismic network. The possible recognition of small size magma bodies at shallow and intermediate depths (between 0 and 10 km) is one of the main goals of this experiment. Moreover the installation of two seismic antennas and of a high number of broad-band stations could allow a better definition of the source regions of the seismo-volcanic signals (e.g. tremor, LP and VLP events), not still quantitatively well char-

acterized on this volcano. In this work we will present some preliminary results about source mechanisms of volcano-tectonic events and the wavefield characterization of the seismo-volcanic signals recorded during the experiment period.