



Seismic recordings from a new seafloor multidisciplinary observatory, ORION-GEOSTAR 3 (Marsili Basin, Southern Tyrrhenian Sea)

P. Favali (1,2), A. Ciafardini (1, 3), C. Montuori (1), L. Beranzoli (1), F. Frugoni (1),
S. Monna (1), T. Sgroi (1)

(1) Istituto Nazionale di Geofisica e Vulcanologia, Italy, (2) Università degli Studi “La
Sapienza”, Roma, Italy, (3) Collaborator

We show 3-component broadband seismometer data recorded from ORION-GEOSTAR 3 seafloor multidisciplinary observatory, deployed in the Southern Tyrrhenian Sea at 3320 km depth on the bathyal plain NW of the Marsili seamount. The ocean bottom seismometer (OBS) operated continuously in autonomous mode for over 14 months (2003-2005) recording many (~ 900) local, regional and teleseismic events. The high quality of seismic recordings confirms the validity of the installation procedure (as developed and already tested in the GEOSTAR projects) and good ground coupling of the sensor. As first application on these new data we studied, from a qualitative point of view, the S wave attenuation on the horizontal component of seafloor seismometer, using regional events. Strong difference of amplitudes observed from events recorded at different azimuth reflects heterogeneity of S wave transmission efficiency in the uppermost mantle. Starting from these observations, a quantitative study of differential t^* will be performed using the spectral ratio approach, in order to reconstruct the real pattern of seismic wave attenuation.