



PREDOMINANT FREQUENCY VARIATIONS IN THE AMBIENT NOISE RECORDED IN THE COLFIORITO BASIN (UMBRIA, ITALY)

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The Colfiorito basin is located at the boundary between Umbria and Marche districts in Central Italy. The area was struck by several strong earthquakes in the past, and during the September 1997 to April 1998 seismic sequence, the macroseismic intensity was as large as IX (MCS scale) in the region. Ambient noise measurements are carried out over fifty points in the basin; H/V spectral ratios as well as spectral ratios using a reference rock site are calculated. Polarization analyses are also performed in narrow frequency bands where spectral amplitude peaks are observed to dominate, to discriminate preferential directions of propagation in the noise wave field which could be related to source or path effects, other than site effects. In the spectral ratios, the frequencies of the most pronounced peaks generally agree with the resonance frequencies computed for the measurement sites on the basis of 1-D velocity models, at least where no strong lateral variations of the sediment thickness are present.