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Enviromental and on buildings noise measures: Laliptur (Kathmandu)

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We performed a passive seismic survey at Laliptur, south of Kathmandu. The study area spans between 27.61°N - 85.29°E and 85.35°N - 27.65°E.
Ambient vibrations on a 19 almost regular grid points (2 km step) plus 8 other surveys in Kathmandu urban area were recorded. We employed, for comparison purpose, both a TROMINO® (Micromed, Italy) and a Trillium 20s (Nanometrics, USA) velocimeters. In 12 sites a small-scale surface wave prospection was performed using a 50m long geophones array in order to obtain also the subsoil Vs profiles.
The standard Horizontal-to-Vertical Spectral Ratio (HVSR) analyses suggest that the frequency of this part of the Kathmandu basin is within the 0.4 – 0.6 Hz range, lower than previous studies.
Seismic noise was also recorded on some buildings: a) a 14-story tower; b) a 7-story school; c) a 3-story orphanage and d) a 2-story standard house.
For each building a measure outside in free field and at different levels inside was performed. The Standard Spectral Ratio technique (SSR) was adopted to identify the main vibration modes of the structures.