



## **On the sources of seismic signals within a city: Traffic, trains, music, football and more.**

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Urban seismology has become an active research field in the recent years, both with seismological objectives, as obtaining better microzonation maps in highly populated areas, and with engineering objectives, as the monitoring of traffic or the surveying of historical buildings. We analyze here the seismic records obtained by a broad-band seismic station installed in the ICTJA-CSIC institute, located near the center of Barcelona city.

Although this station was installed to introduce visitors to earth science during science fairs and other dissemination events, the analysis of the data has allowed to infer results of interest for the scientific community. The main results include the evidence that urban seismometers can be used as a easy-to-use, robust monitoring tool for road traffic and subway activity inside the city. Seismic signals generated by different cultural activities, including rock concerts, fireworks or football games, can be detected and discriminated from its seismic properties.

Beside the interest to understand the propagation of seismic waves generated by those rather particular sources, those earth shaking records provide a powerful tool to gain visibility in the mass media and hence have the opportunity to present earth sciences to a wider audience.  
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