



## **SeismoCitizen : A project combining seismology and human science approaches based on a deployment of a dense low cost seismic network hosted by citizens.**

Antoine Schlupp (1), Philippe Chavot (3), Marc Grunberg (2), Maxime Bes-De-Berc (1), H el ene Jund (2), Fanny Ajak (2), J er ome Vergne (1), Fr ed eric Masson (1), and Jean Schmittbuhl (1)

(1) Universit e de Strasbourg, CNRS, IPGS/EOST, UMR7516, 5 rue Ren e Descartes, 67100 Strasbourg, France (antoine.schlupp@unistra.fr), (2) Universit e de Strasbourg, CNRS, EOST, UMS830, F-67000 Strasbourg, France, (3) Universit e de Strasbourg, CNRS, EA 2310, F-67000 Strasbourg, France

After a first deployment of 8 low cost seismic stations in 2017 around Strasbourg, we launched end of 2018 a multidisciplinary project of citizen seismology called SeismoCitizen. It associates Seismology with Social/Human science research. It is intended to build a real network of observation sites in urban and peri-urban areas, based on internet-connected stations hosted by volunteer citizens, who will also participate in a survey conducted by sociologists.

This dense low cost seismic network makes it possible to densify the mesh of the permanent French institutional observation network (RESIF). Thus it improves the French monitoring activities of BCSF-RENASS (characterization of the seismicity as location, depth, discrimination) and products like "shakemap". They will be helpful also for the seismic risk assessment and the data, available for researchers, could also be used to improve the seismological imaging, in particular by passive methods based on the analysis of seismic noise.

The Social/Human Science study aims at observing and analyzing the effects of a citizen engagement in scientific research (via hosting a seismometer) on the perception and representation of seismology and micro-seismicity phenomena. Therefore the volunteer citizens will participate to 2 interviews: at the time of the installation and 6-8 months later.

First, during November 2018, the instrumental response of the 27 Raspberry Shake station were simultaneously fully characterized in respect to a reference permanent BB station at the instrumental testing platform of EOST. Then the stations have been deployed during the winter 2018-2019 in a intra-continental region, Mulhouse at NE France, where the seismicity is moderate in terms of number and magnitude (the Sierentz earthquake in 1980, Mw 4.1 is the most recent one with Mw>4) but which has been the site of one of the largest event in western Europa, the Basel earthquake of October 1356 with a Mw estimated at  $\approx 6.5$ . It is an intense industrialized region with high environmental potential impact. It is also one of the French metropolitan regions where seismic hazard level, considered in the national regulation zoning, is the highest.