



Regional ambient noise tomography of the Pyrenees using correlation of correlation

jacques brives, laurent stehly, pierre boué, and anne paul

Université Grenoble Alpes, ISTerre, Ondes et Structures, Gières, France (jacques.brives@univ-grenoble-alpes.fr)

Ambient seismic noise correlation method (C1) has proved to be an efficient way to retrieve surface wave propagation between any station pair. This method is now extensively used for seismic tomography and monitoring and benefits from the development of dense array. In this study we propose to revisit a dataset of broadband stations deployed across and around the Pyrenees massif between 2011 and 2013. Using correlation of correlation method (C2) we are able to improve both the quality and the amount of surface wave dispersion measurements between synchronous and asynchronous station pairs. This allow us to drastically improve the ray coverage inside an around the massif and finally to obtain high resolution group velocity maps from 6s to 40s of period. Combined with C1, C2 method unveils sharp geologic structures within the massif between two asynchronous deployment and also allow us to have a much greater coverage of the Golf de Gascogne.