

1.2-P06. Development of a seismic velocity model of West Africa using IMS data and IDC products

To predict and mitigate the effects of future earthquakes in the West Africa, more information is needed regarding both, local earthquake sources and how seismic waves travel through the region. Velocity model gives access to direct assessment of underground shear properties, high-accuracy interpolation in both depth and range, important for environmental characterizing and protection. Velocity model is also very important for earthquakes location and discrimination between natural and artificial event. The elastic deformation of ground motion doesn't only propagate body waves. Much of the energy generated by seismic source propagates surface wave. In fact, surface wave inversion provides vertical distribution of the S wave velocity below structure, that is particularly true in West Africa where the density of seismic stations is extremely weak, and the number of seismology work is very restricted. From one dimensional dispersion curves of surface wave, an inversion process is used, with an initial velocity model to generate a new velocity model of shear wave as a function of the depth. With this representation, once the source depth is specified, it is straightforward to find the traveltimes explicitly for a given epicentral distance.

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