

Structure of West Africa from Surface Wave Tomography Using Regional Earthquakes and Ambient Seismic Noise

Most models of seismic structure of the West African craton come from global-scale studies. With a higher-resolution regional velocity model, we could locate seismic events and calculate regional Green's functions more accurately, thereby improving discrimination between natural earthquakes and man-made events. We aim to produce a 3D regional shear wave velocity model for West Africa, using surface wave tomography, with both regional earthquakes and seismic ambient noise cross-correlation. By using these two types of data we improve azimuthal coverage of the region and therefore hope to produce higher resolution models than possible using earthquakes alone. We presented our preliminary Rayleigh wave group velocity maps obtained from earthquake recordings at the last SnT conference. They imaged the large geological structures of the region (craton, shields, sedimentary basins and mobile belts zone). We now present the results from ambient noise correlation between 26 regional stations and the results from the joint dataset.

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