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Estimation for seismic wave propagation property of soil structure based on seismic interferometry

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Recently seismic interferometry was applied to estimation for seismic response of natural ground but also those of artificial structure like a building. We applied seismic interferometry concept for retrieval of seismic response of a model dike of soil structure like a fill dam. We employed deconvolution interferometry to estimate seismic response in time domain. From the waveforms obtained from deconvolution with the motion in the basement of a model dam, we estimate traveltimes of shear wave propagating through it and its mean velocity. Estimated velocity explain the normal mode of a model dike well. This approach can be applicable to monitor change in seismic response a dike caused by strong earthquakes or its internal water content change.

Keywords: Seismic interferomtetry, Soil Structure, Dam body, Dike, Shear velocity, Centrifuge test, Fill dam