



Locating weak changes with diffuse waves and ambient noise: theory and numerical validation

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Coda waves are the random waveforms that constitute the late part of the seismograms after an earthquake. These signals have long been considered as devoid of any practical information on the geological materials through which they propagate. In the 1980's, the idea of using these late arrivals to track small relative velocity changes in the earth emerged, a technique later named Coda Wave Interferometry. A more recent procedure named Locadiff proposes to locate structural changes by processing the decorrelation of the coda waveforms. This contribution will cover recent theoretical and numerical developments aiming at modeling the direct problem: knowing the medium and the change occurring within it, what is the expected decorrelation and/or apparent relative velocity change that we will observe at the sensors?

Bibliography :

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