

1164-35-27

Loc Nguyen*, 9201 University City Blvd, Charlotte, NC 28223. *A numerical method for the linearization of the travel time tomography problem with incomplete data.* Preliminary report.

We propose a new numerical method to solve the linearized problem of the travel time tomography with incomplete data. Our method is based on the technique of the truncation of the Fourier series with respect to a special basis of L^2 . This way we derive a boundary value problem for a system of coupled partial differential equations (PDEs) of the first order. This problem is solved by the quasi-reversibility method. The spatially dependent Fourier coefficients of the solution to the linearized eikonal equation are obtained this way. Numerical results for highly noisy data are presented. (Received January 03, 2021)