# TELESEISMIC WAVEFORM MODELING IN 2.5 DIMENSIONS

By

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# ABSTRACT

In this thesis we adapt a $2D$ frequency domain finite difference method previously developed for active source seismological wave propagation to now calculate the $2.5D$ elastic response of a local media to teleseismic waves. Since the method is spectral and the discretization is high order it is well equipped to run on moderately sized computers. To prevent us from having to simulate an entire Earth response, we adopt a total field scattered field approach with an analytic solution built on the $1D$ Haskell propagator method. We also adapt a method for reducing numerical artifacts such as anisotropy and dispersion arising from discretization.