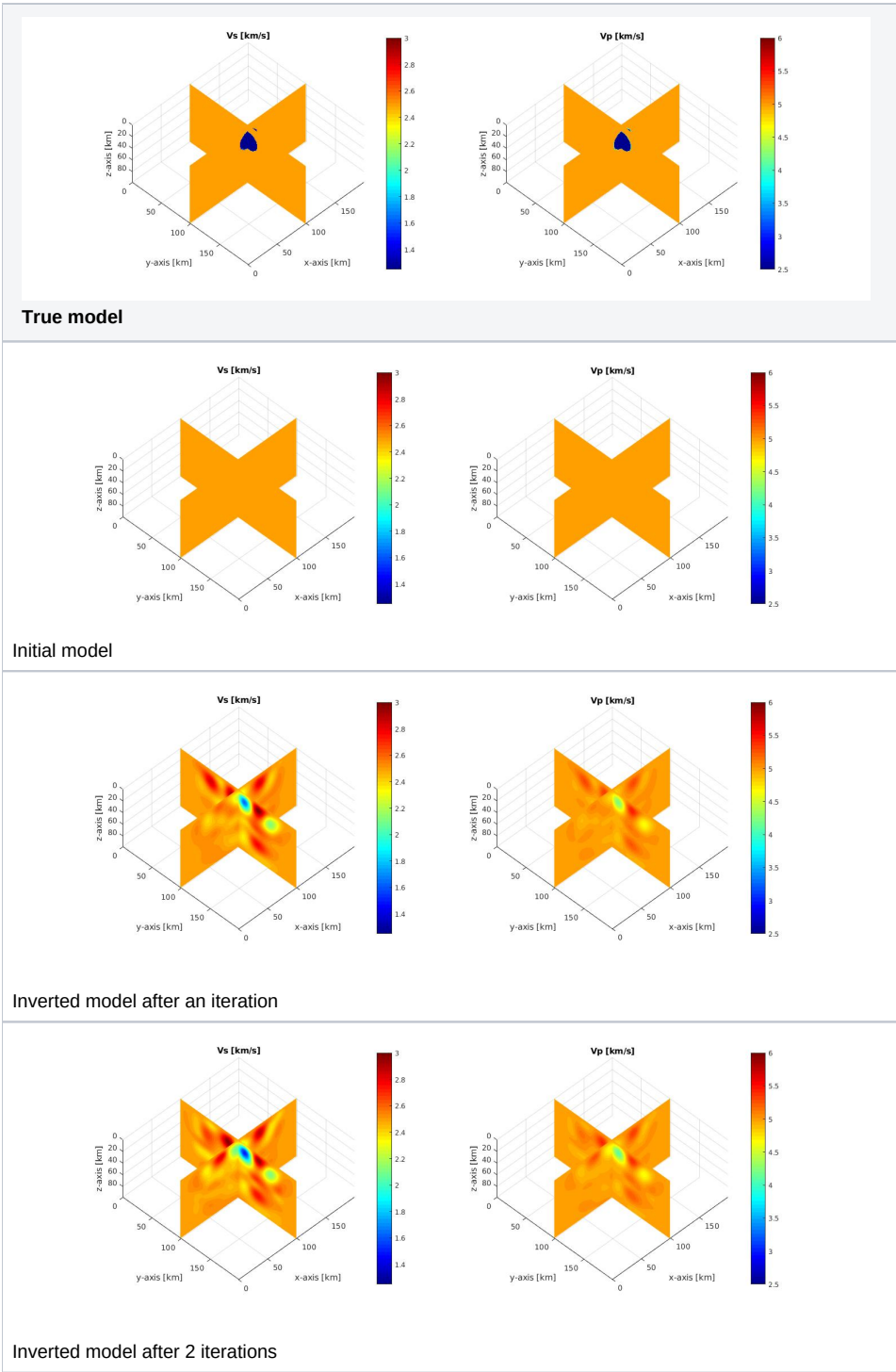


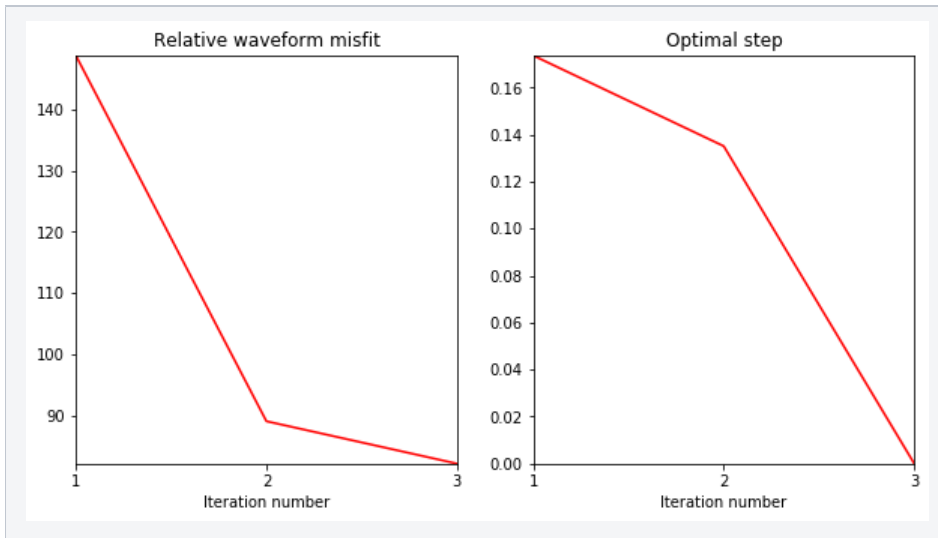
Inversion of the true model with embedded low-velocity sphere using GSDF method for a low-frequency broadband

TO DO: In this inversion using 16 sources and 49 stations, the broadband selection of adjoint source is only applied for a low frequency band of [0.02 0.03 0.04 0.05] Hz. Seismograms are filtered from 0.02-0.05Hz (The low-cut filter is important for removing low frequency noise before gsdf selection of adjoint source). The inversion finishes after 3 iteration when no optimal step length found.

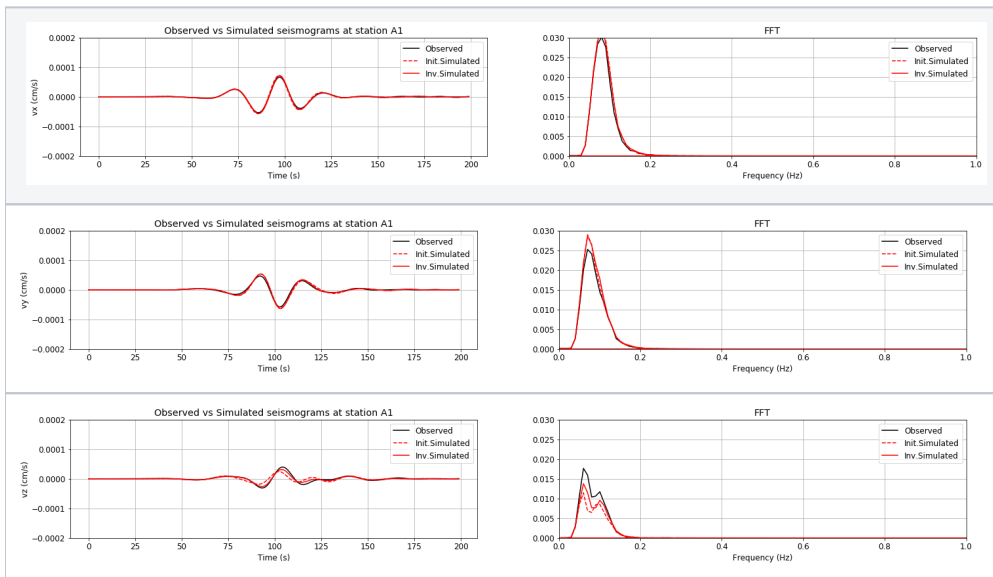
The true, initial and inverted models:



Misfit function and step length:

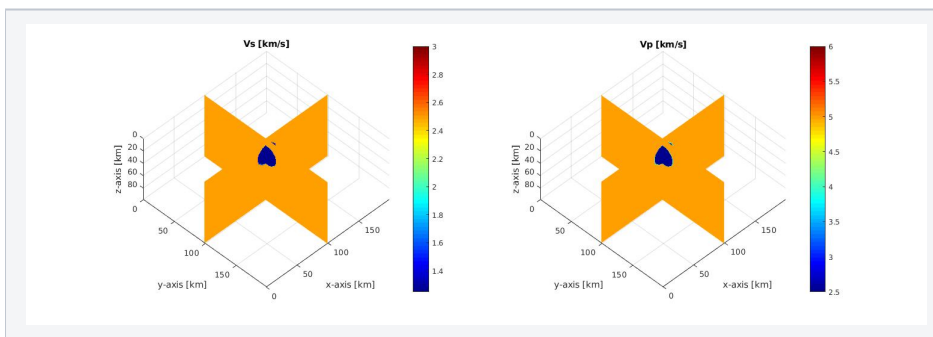


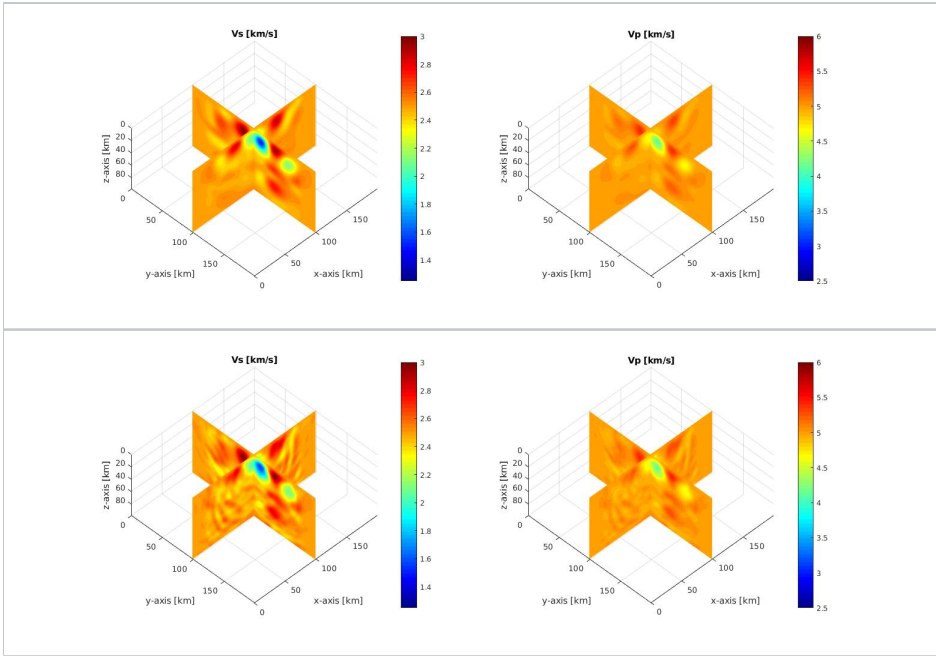
Waveform comparison between observed and simulated seismograms after one iteration for source 6 at station A1. Here, sources 6 and 7 have been used as reference sources for misfit calculation.



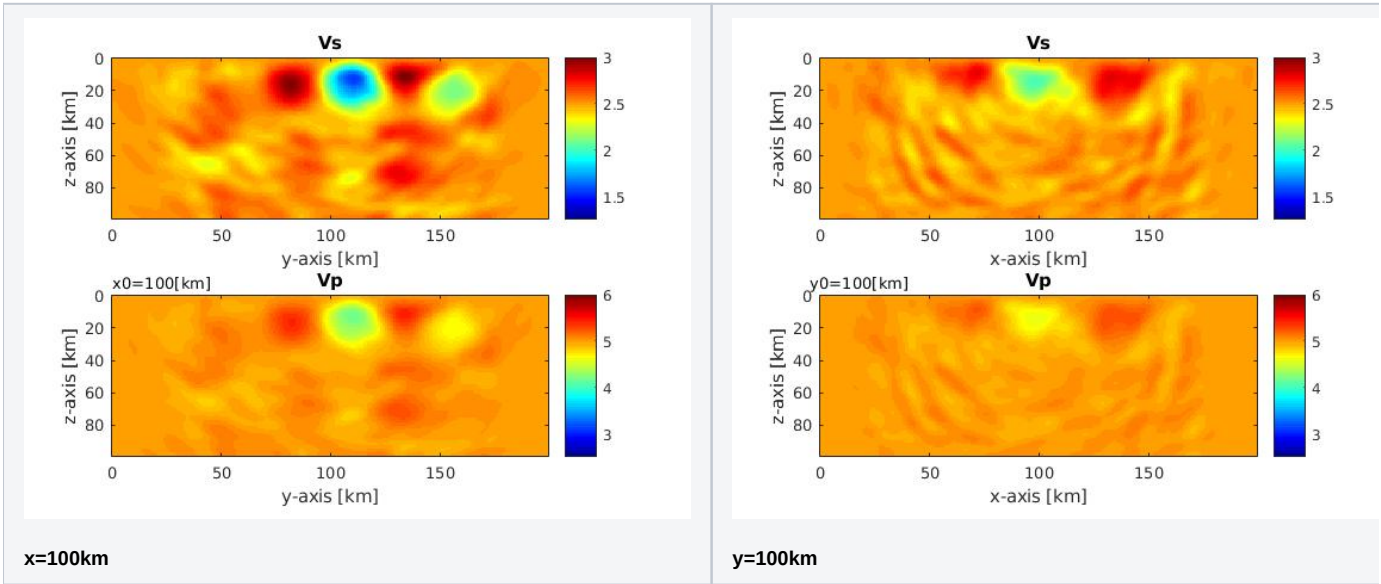
Improve the inverted result using broad-band selection of adjoint source for seismograms filtered from 0.02-0.2 Hz. The frequencies [0.025 0.05 0.075 0.1 0.125 0.15 0.175 0.2] Hz was used for narrow-band filter.

The same test configuration of 16 sources and 49 stations has been used for inversion. The second run finished after 2 iterations.

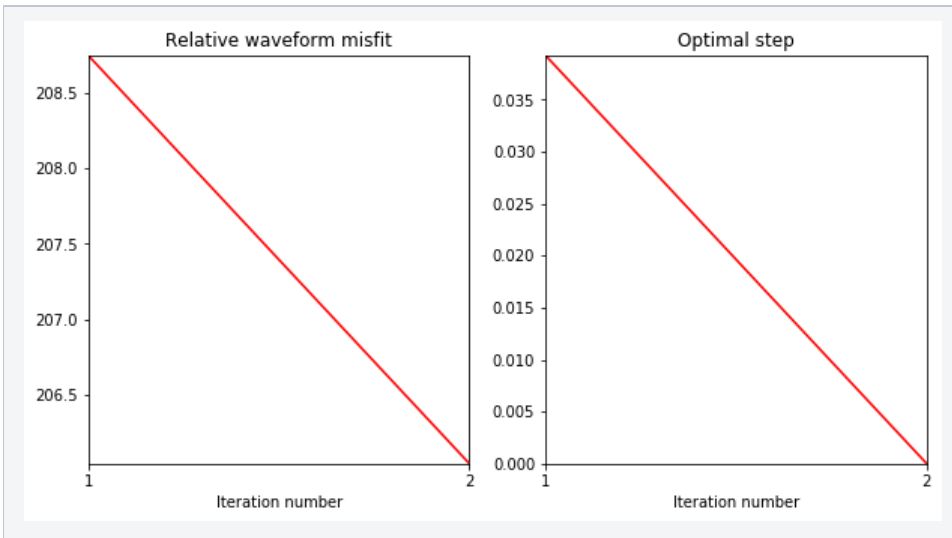




Cross sections of the final inverted model



Misfit function and step length:



Waveform comparison between observed and simulated seismograms after one iteration for source 6 at station A1. The delay time has been changed comparing to the waveform filtered at lower frequency due to the built-in filter in in emod3d.

