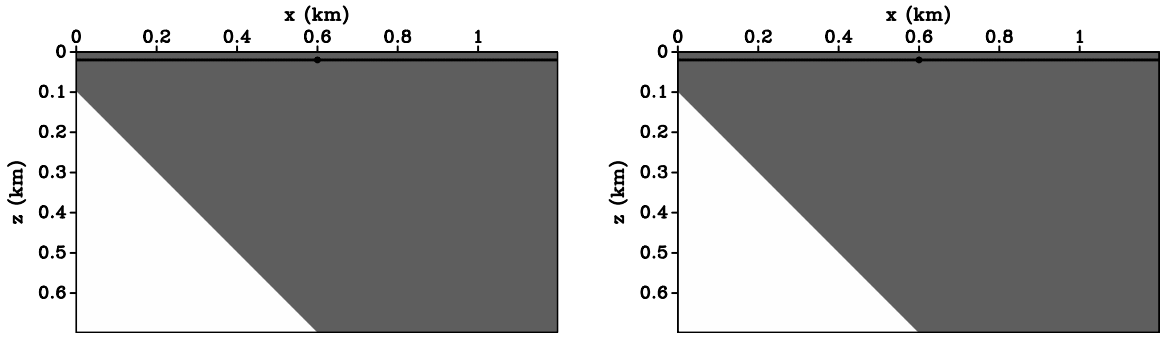
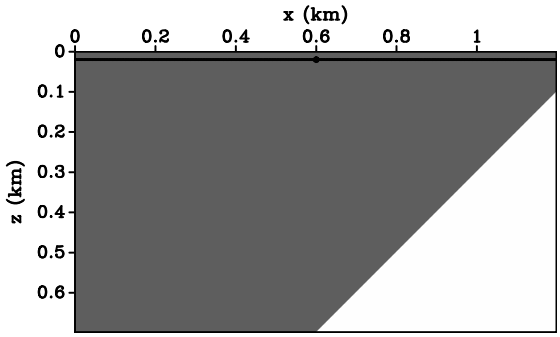
Your assignment is to modify an elastic finite-differences modeling program by output the wavefield scalar and vector potentials. The program `EFDM.c` implements time-domain finite-differences modeling with output of displacement generated with an elastic wave-equation. Refer to the course slides for details about what needs to be added and where. Add comments in the code to indicate your modifications.



(a) (b)

Figure 1: Velocities.



(a)

Figure 2: Density.

LOGISTICS

1. Run `scons` in the `CODE` directory to rebuild the modeling code.
2. Run `scons view` to view figures constructed with your modified code.
3. Run `scons lock` to copy the new results to the storage directory.
4. Run `scons handout.read` to build your answer. A PDF file is constructed using your newly created figures and modifications to the text. The modified code is automatically added to the document.

WRAP-UP

Once you are satisfied that your document looks ok, upload it to Canvas.

N.B. This is an individual assignment – your work is subject to the Mines Academic Integrity policy.

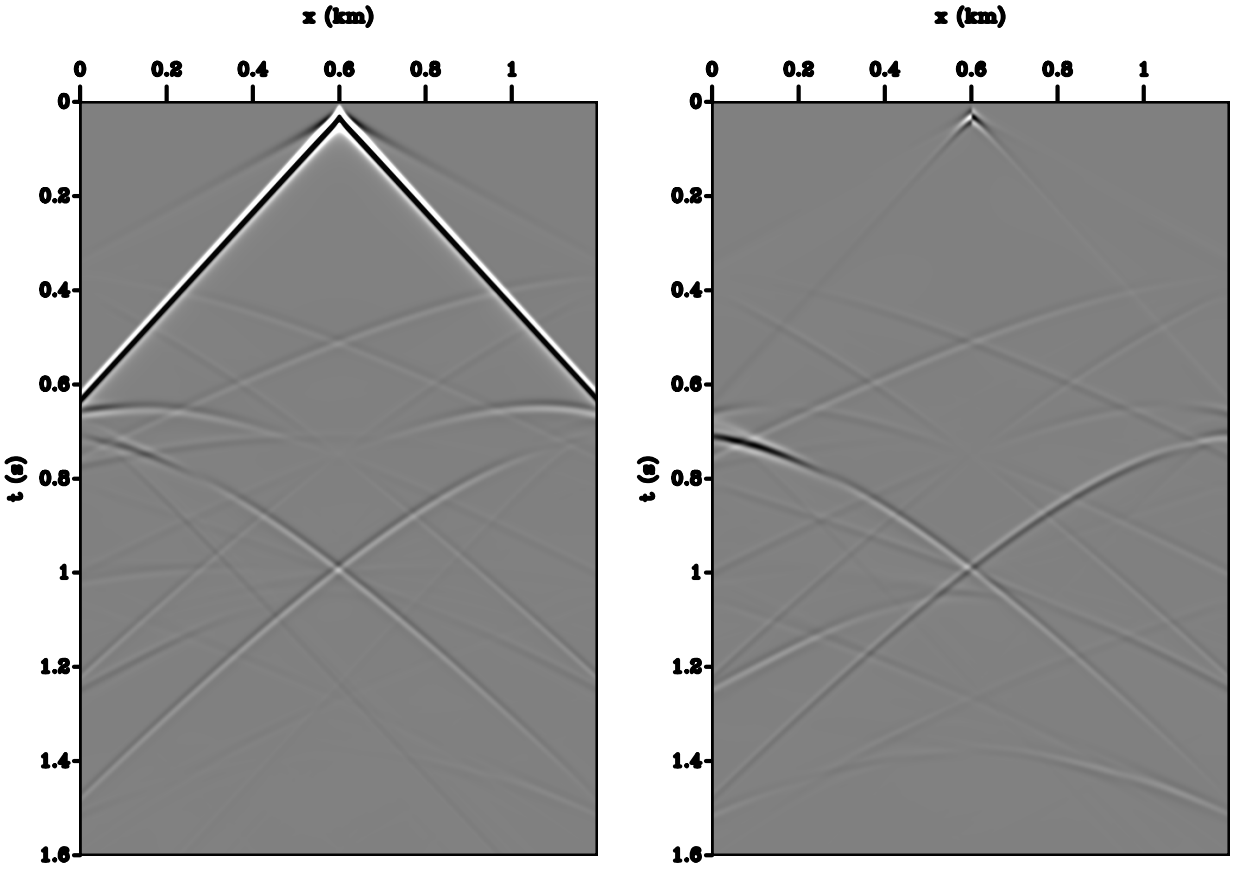


Figure 3: Data – displacement (z,x).

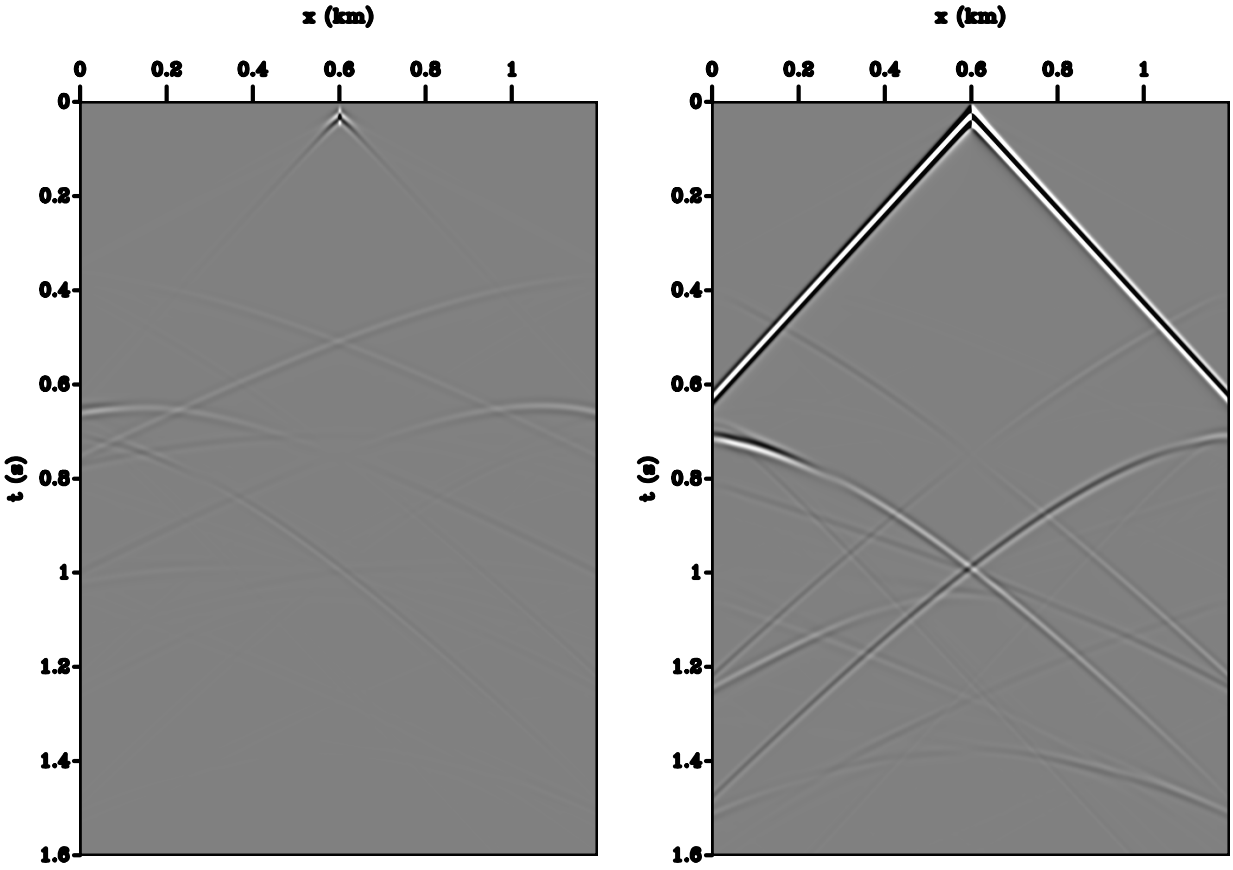


Figure 4: Data – potentials (P,S).