Elastic reverse-time migration

Zaiming Jiang*, John C. Bancroft, and Laurence R. Lines

Key Seismic Solutions, mark.jiang@keyseismic.com

Elastic imaging conditions

- A problem with cross-correlation imaging conditions is strong source effect.
- A problem with source normalized cross-correlation imaging conditions is weak source effect.
- A new method of imaging conditions is proposed and compared to the above two methods. Both the strong and weak source effects are suppressed.

Prestack RTM workflow

- A prestack reverse-time migration workflow is proposed. The processing workflow is very different from traditional seismic data processing workflows. For example, it is not necessary to remove ground roll from surface records.
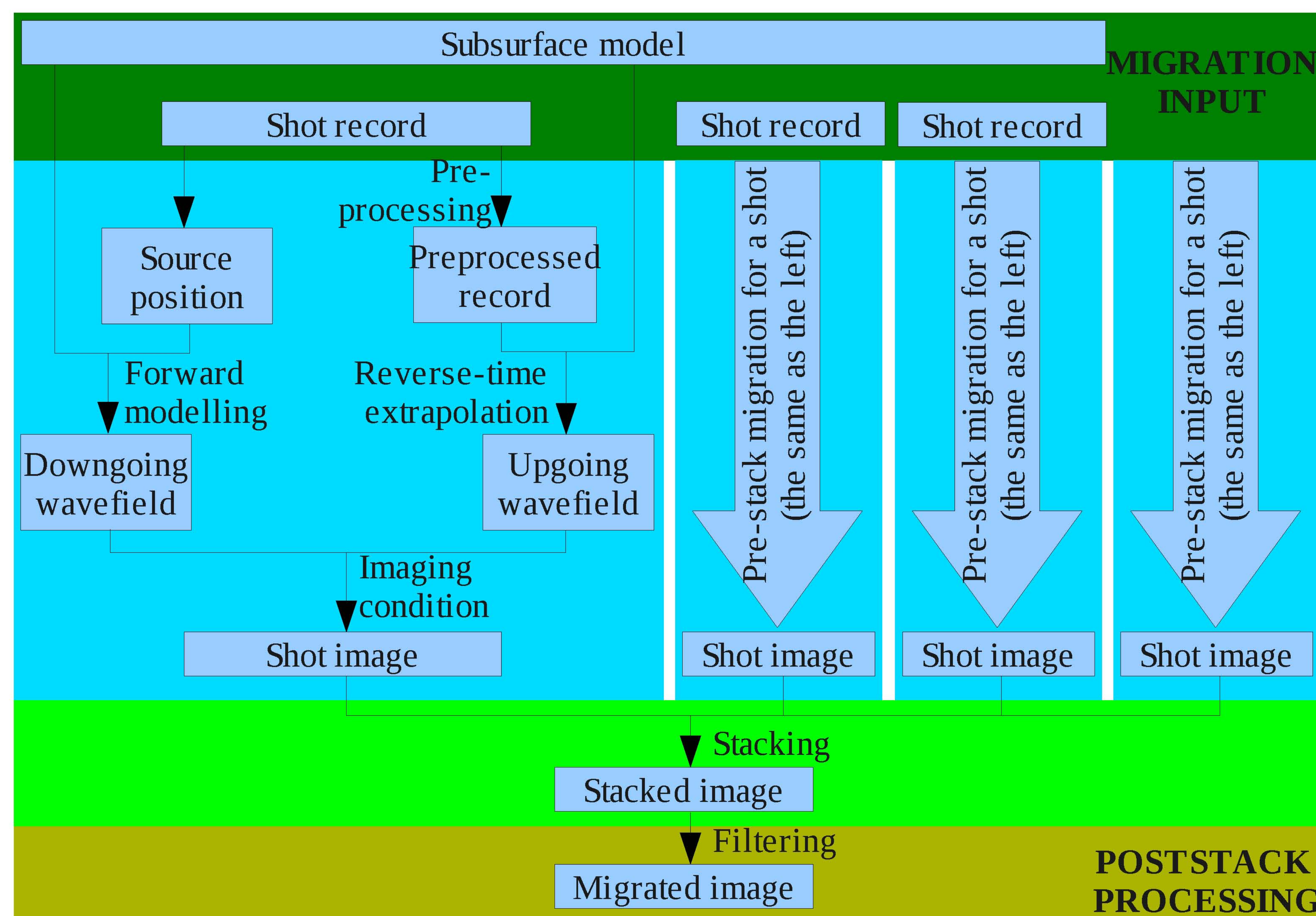

Figure: Prestack RTM workflow.

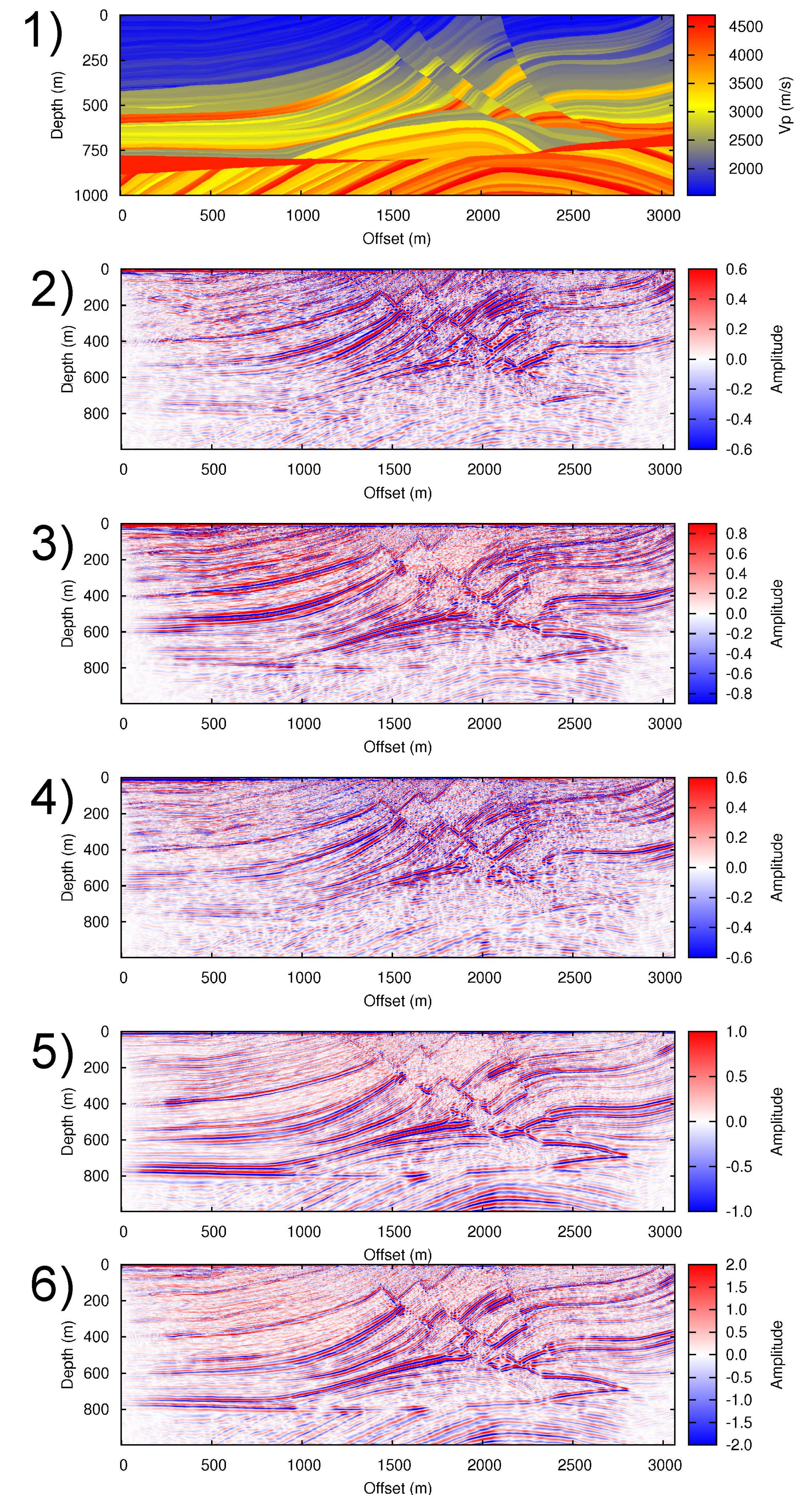## Migration results using Shrunk Marmousi2

Figure: Energy normalized imaging condition. 1) P-wave of shrunk Marmousi2. 2) HV imaging (horizontal source wavefield versus verticle receiver wavefield). 3) HH imaging. 4) VH imaging. 5) VV imaging. 6) Stacking of 2 5.

CREWES

UNIVERSITY OF CALGARY