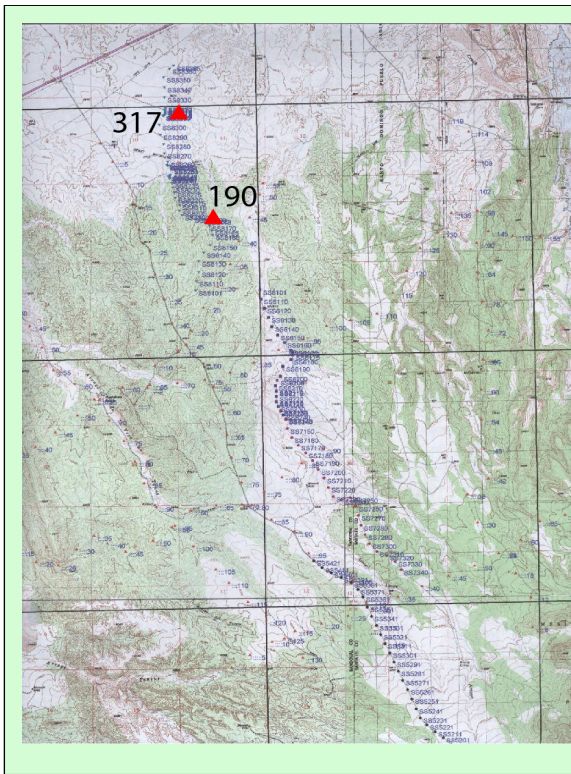


Seismic Refraction Over the Budaghers Fault

Jason Ricketts
San Diego State University, CA
July 9, 2008

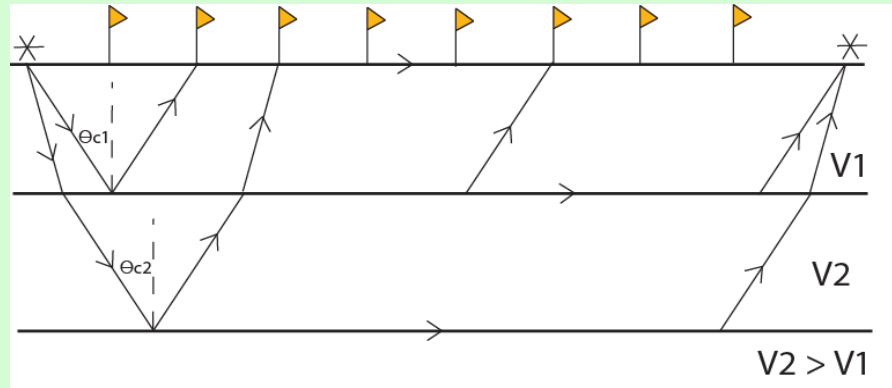
Preview of Presentation

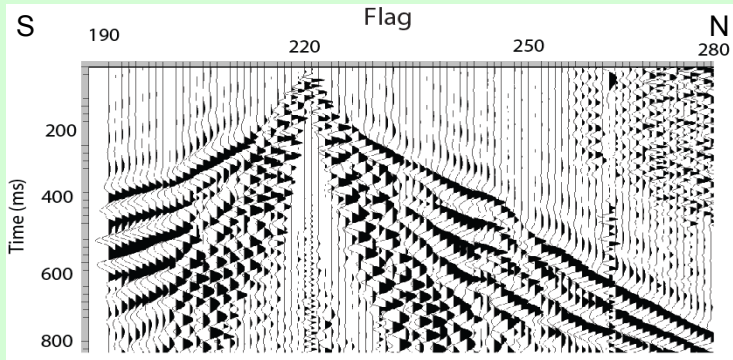
- Overview of seismic refraction
- Collected seismograms
- Interpretation of seismograms
- Inversion
- Possible throw of the fault
- Elevation Corrections
- Conclusions



Seismic
refraction data
analyzed from
flags 190 - 317

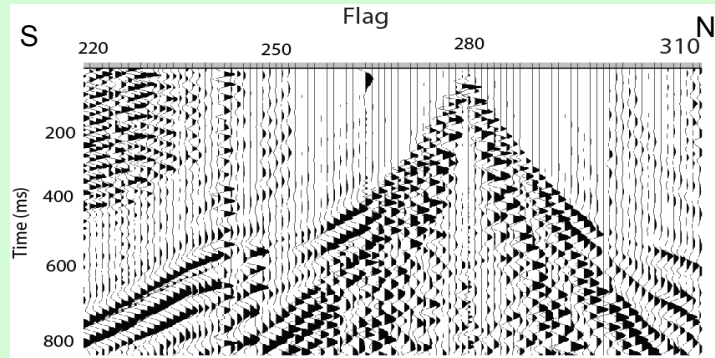
Principles of Seismic Refraction

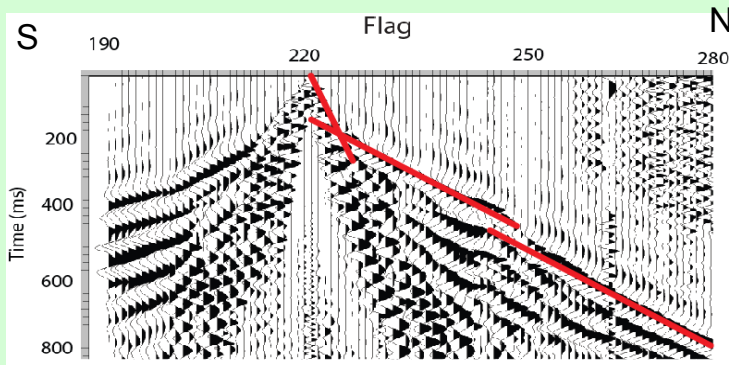




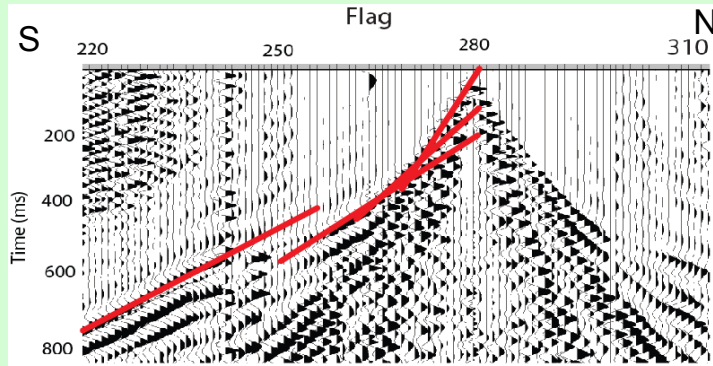
Split-spread
from flag
190-280

Split-spread
from flag
220-310

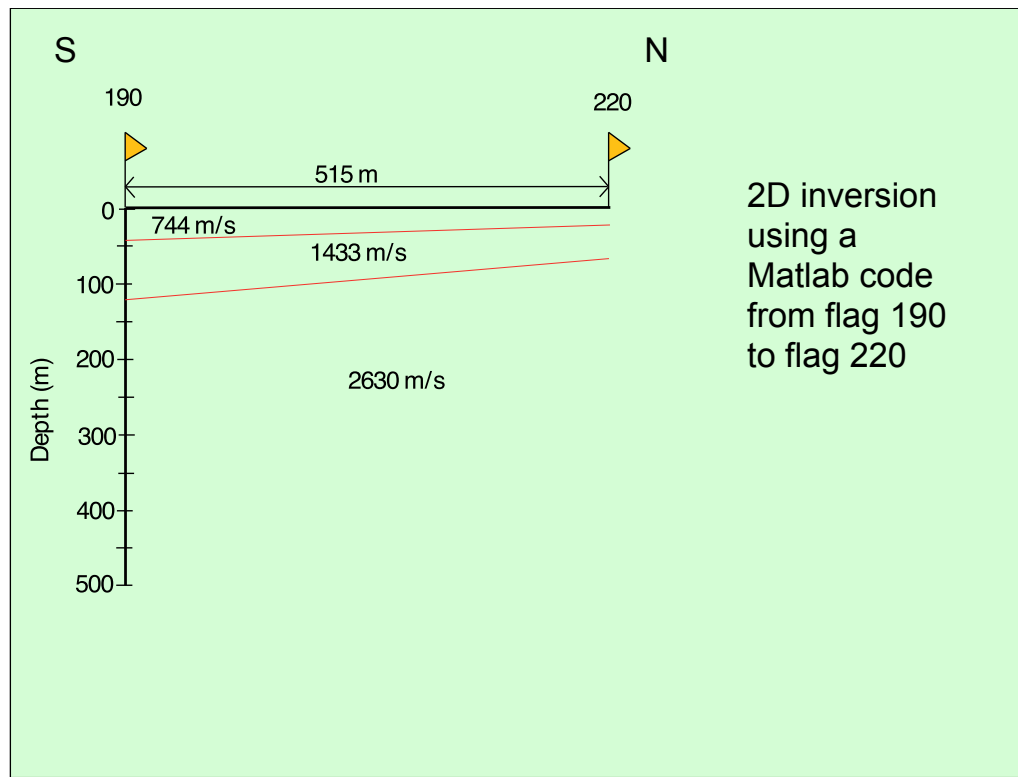


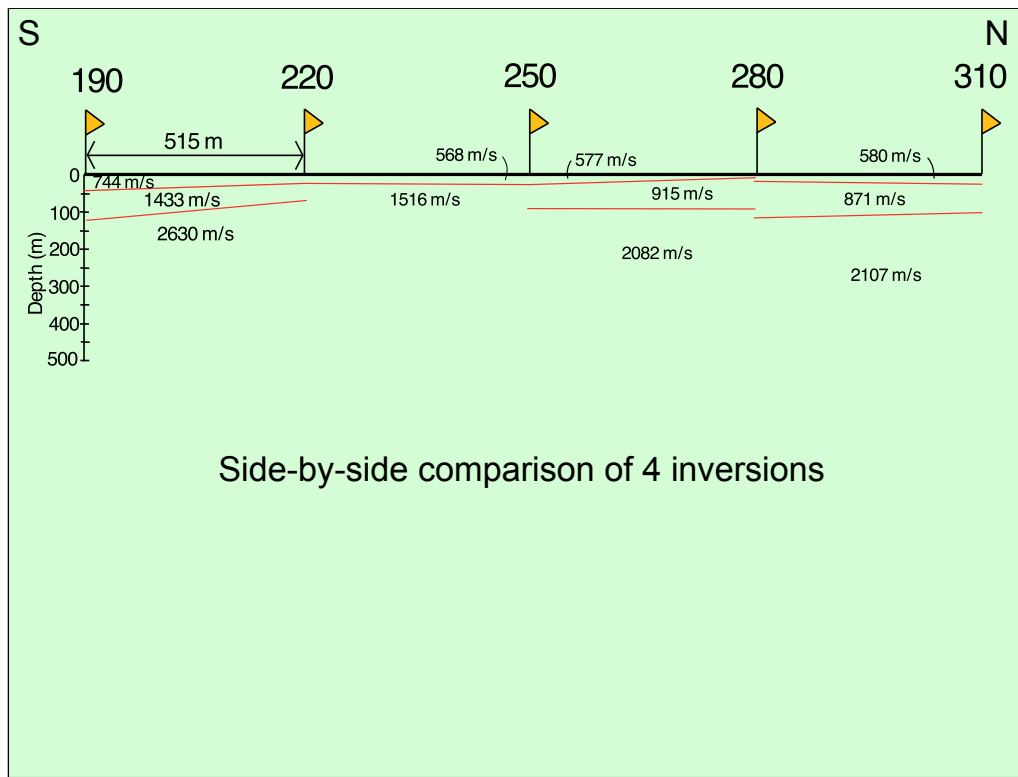


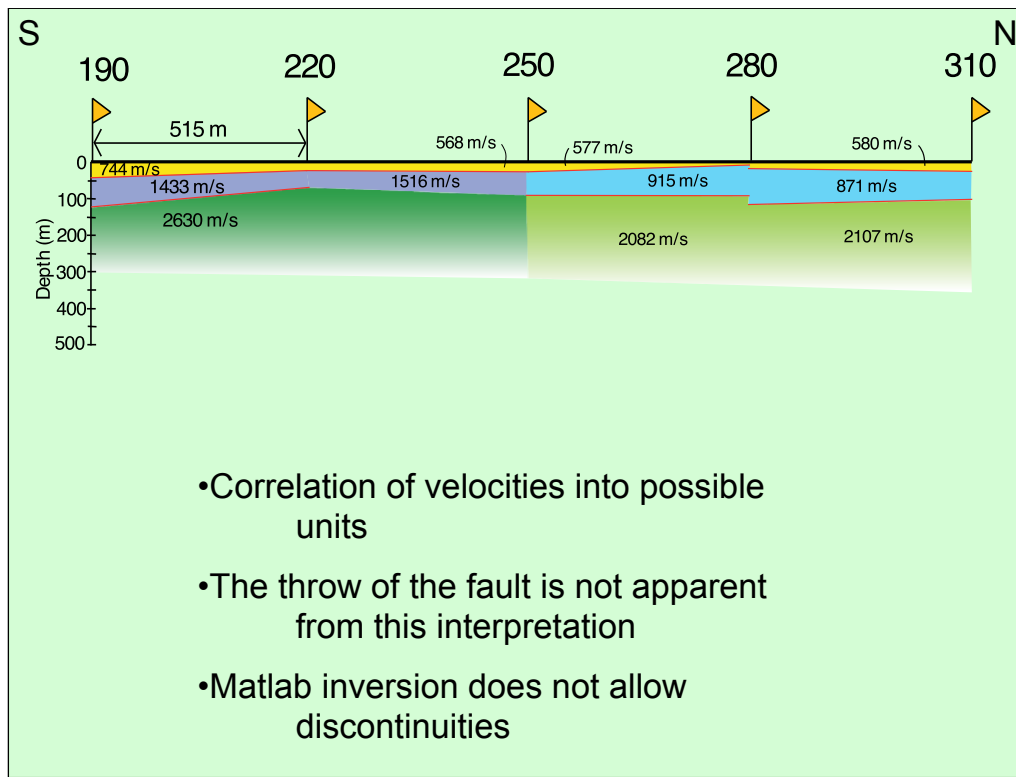
There is a jump forward in time when shooting north across the fault



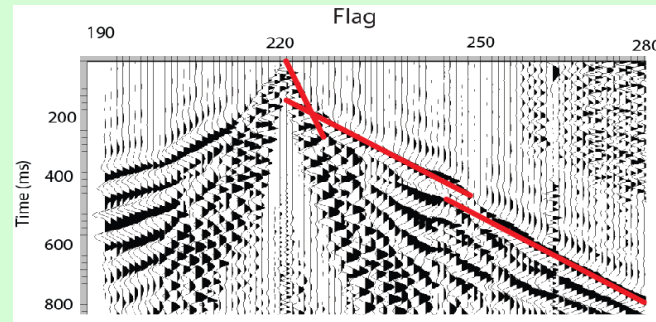
There is a jump backward in time when shooting south across the fault





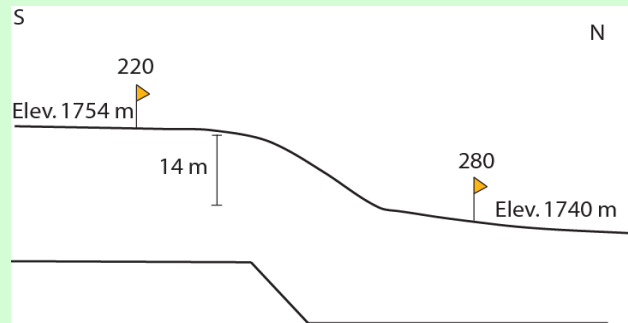


Throw of the Fault?



Assuming constant elevation, and using the difference in intercept times and the velocity of layer 2, I calculated a throw of 104 m.

Elevation Corrections



To correct for elevation, we must move both shot and receiver to a common datum.

The corrected calculated throw of the fault is 78 m.

Conclusions

Inversion on either side of the fault shows a difference in velocity with depth.

Inversions were not corrected for elevation or geometry of the road.

The throw of the fault is possible to calculate due to the lag time in the seismograms. This assumes a near vertical fault. Corrections for elevation are only approximate.