

***Seismic physical modeling: 2D and 3D surveys
and VVAZ/AVAZ effects involving HTI targets***

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CALGARY***

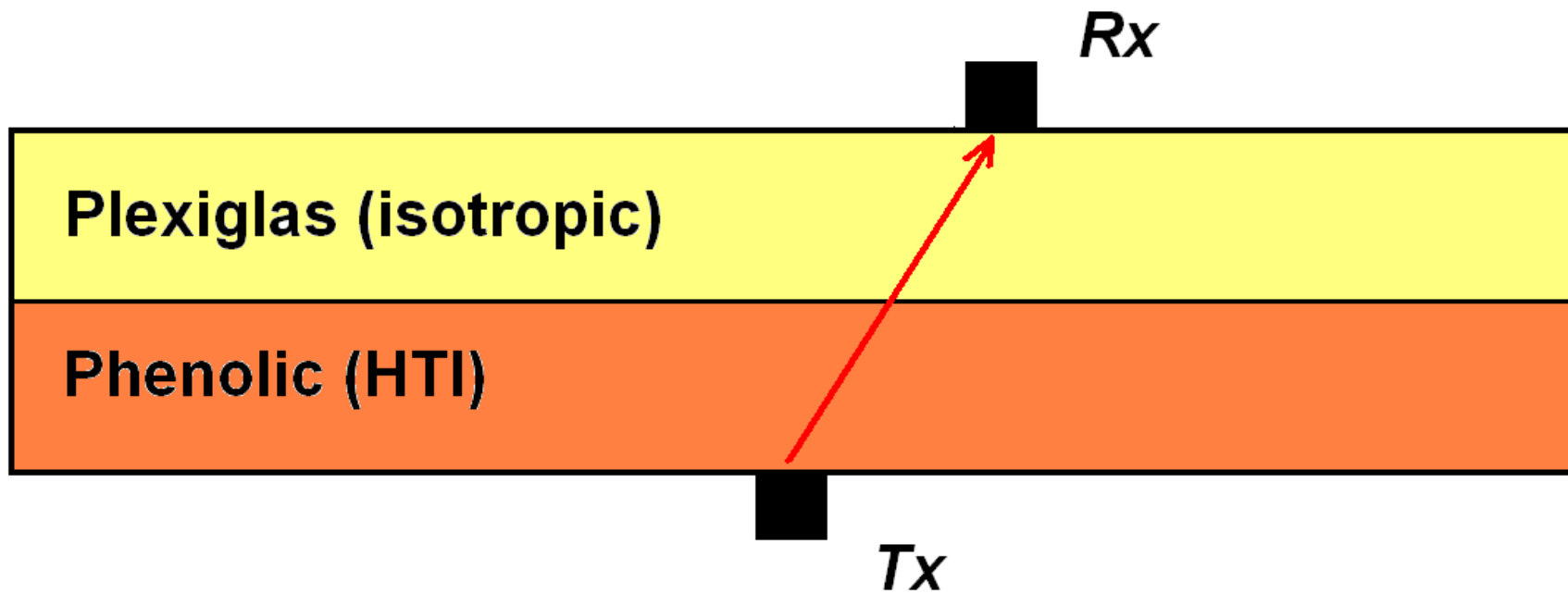


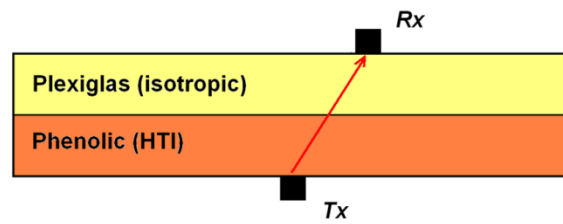
CREWES

OUTLINE

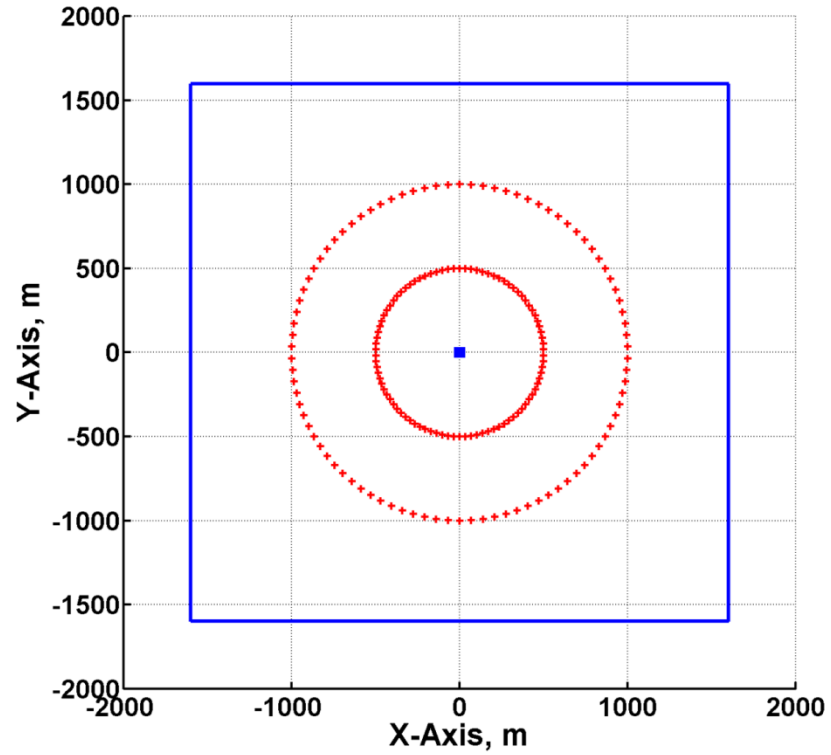
- 1. Introduction***
- 2. Simultaneous source acquisition***
- 3. VVAZ effects***
- 4. AVAZ effects***
- 5. Summary and Conclusion.***

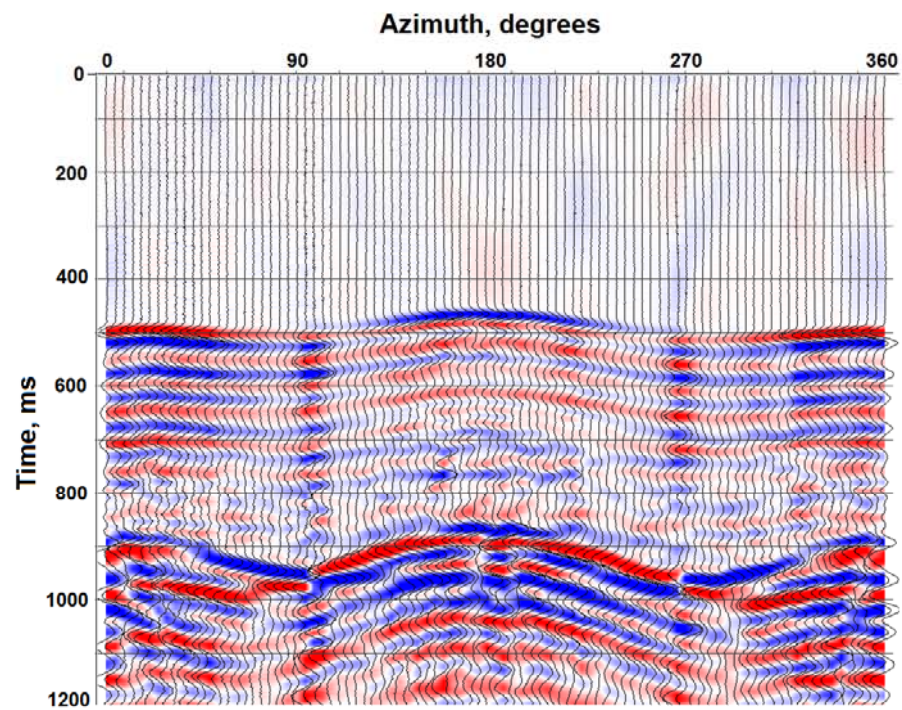
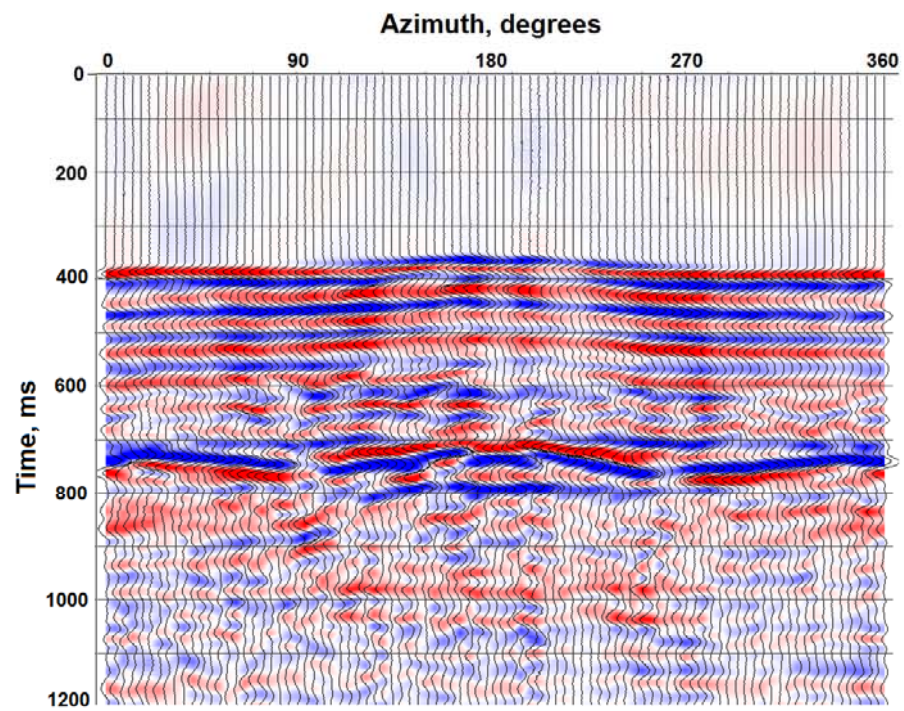
Model 1
Two-Layer Model





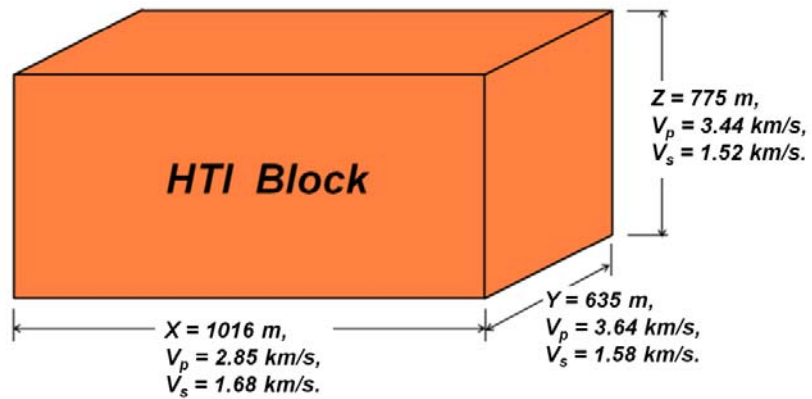
Surface Receiver Points



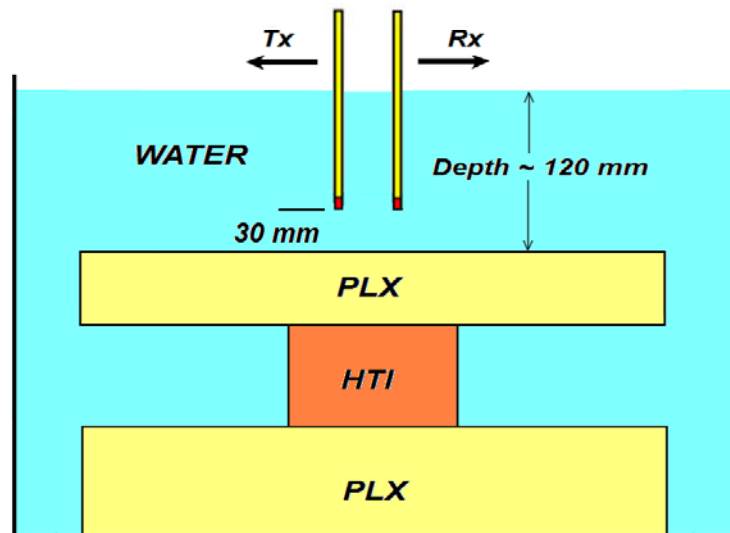


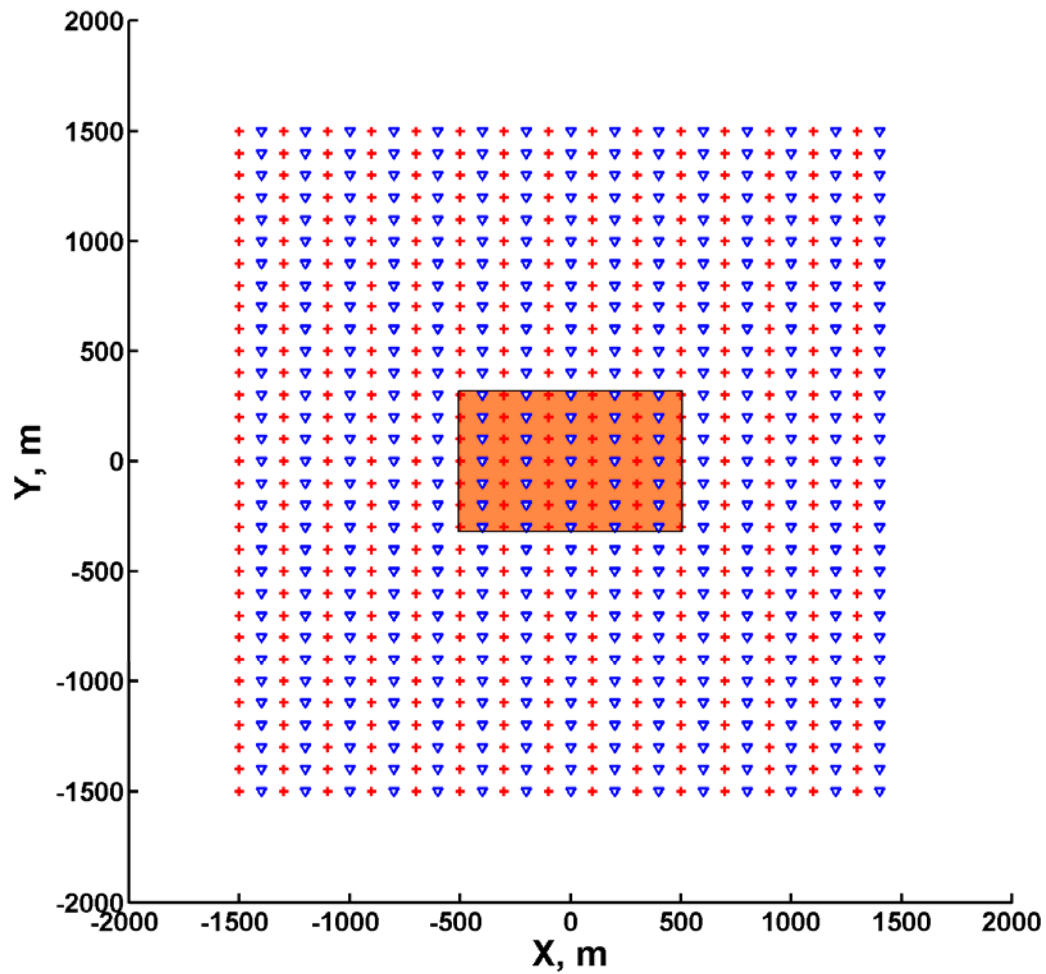
Model 2
The Block Model

(a)

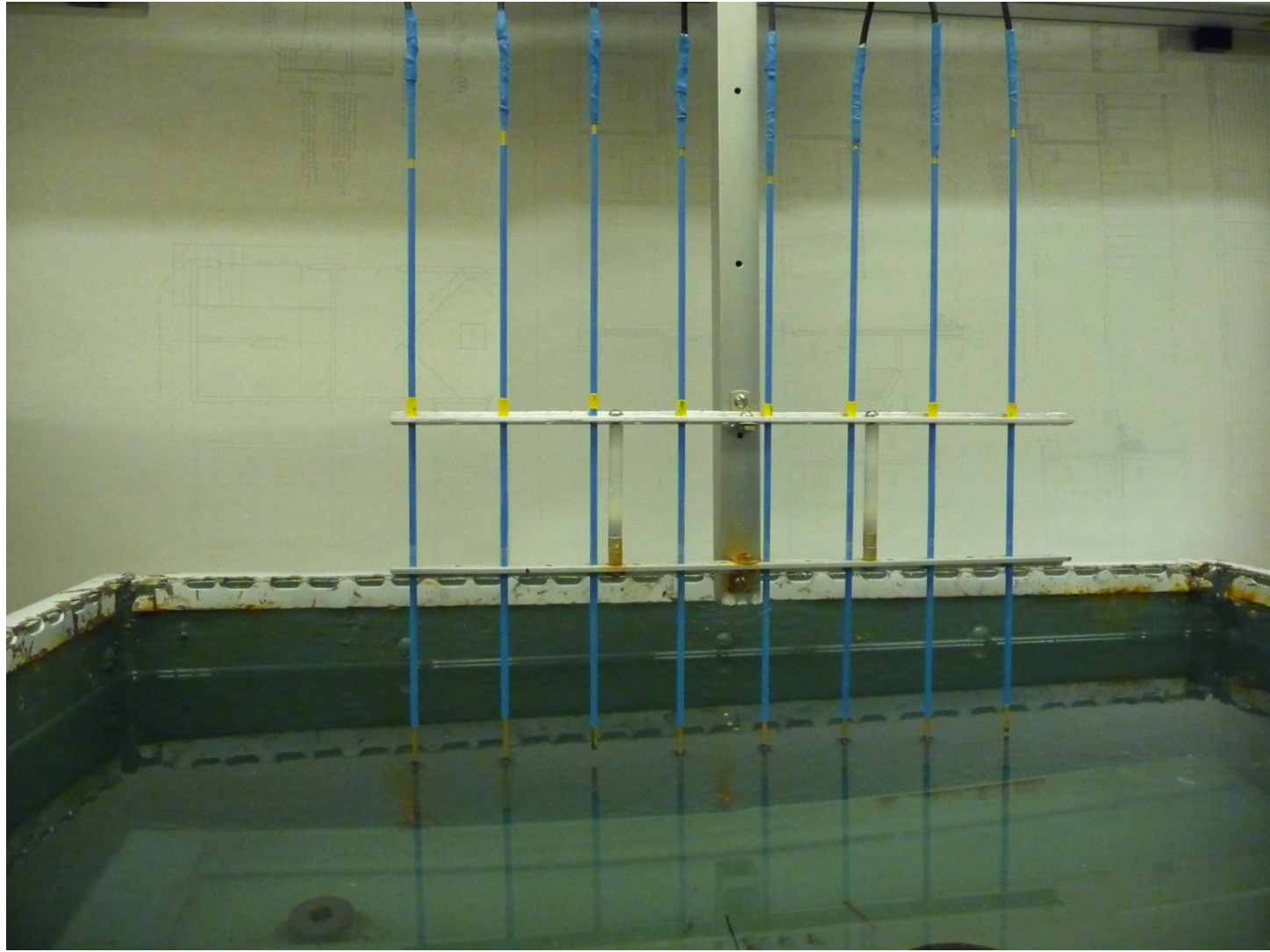


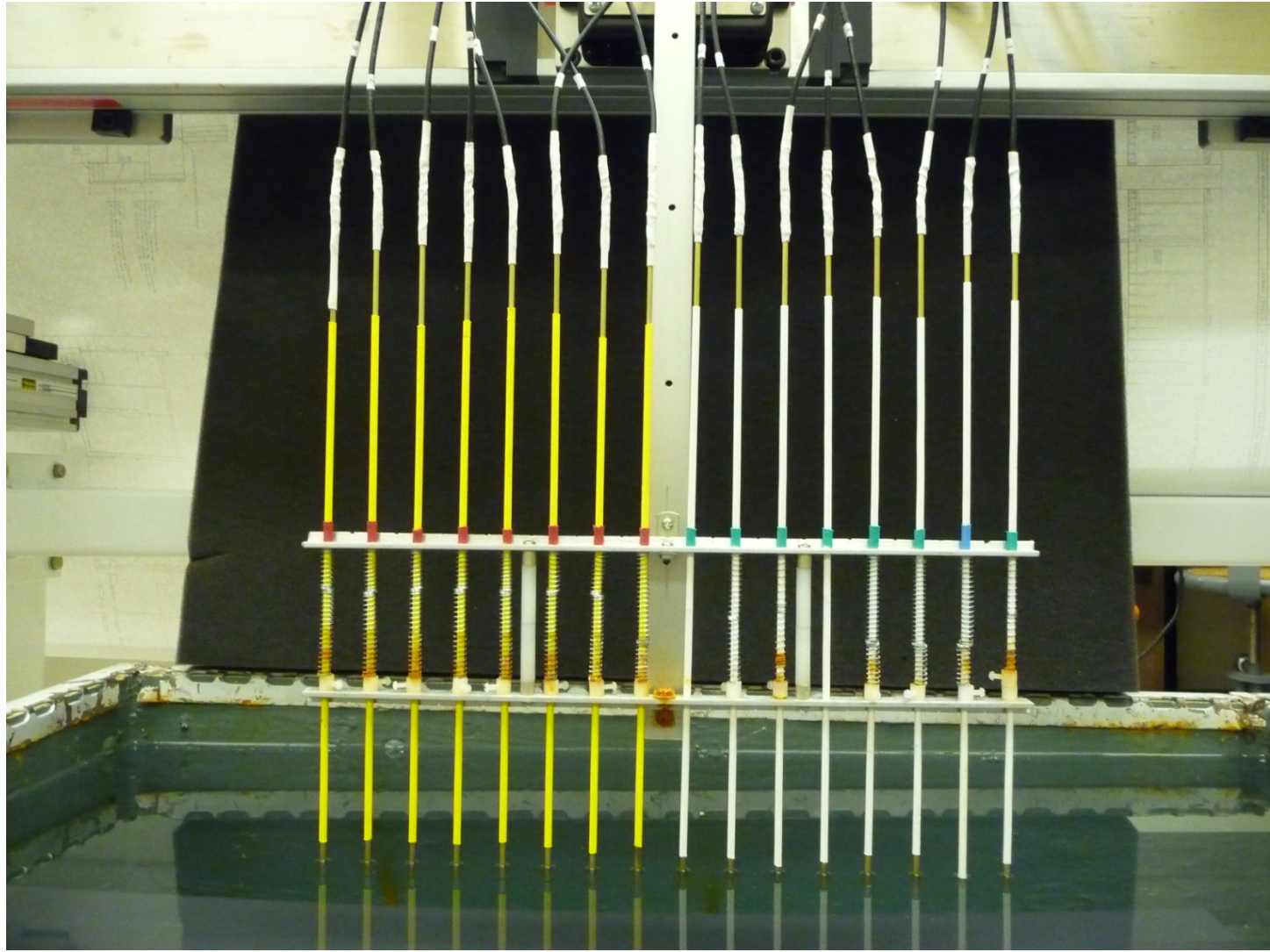
(b)

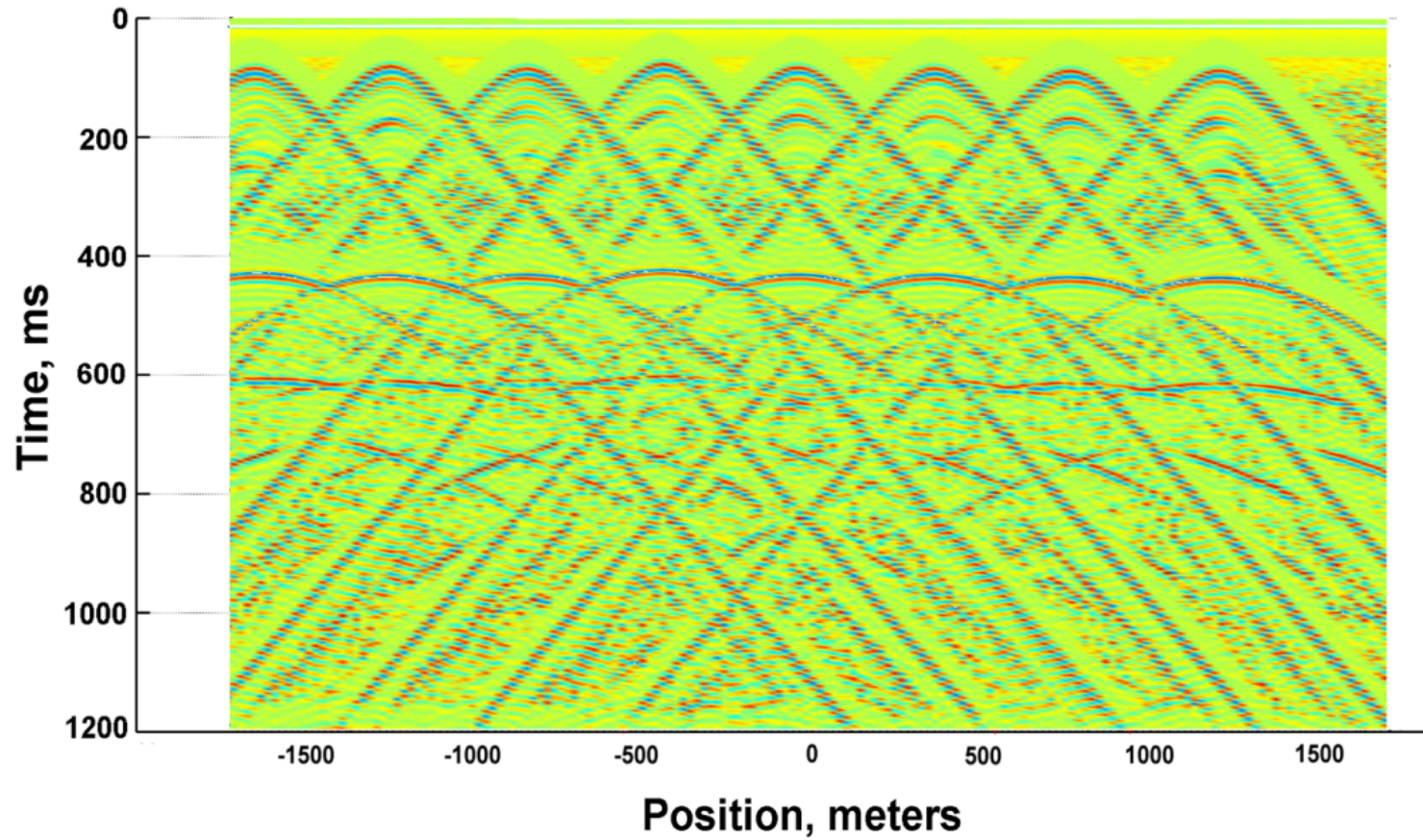




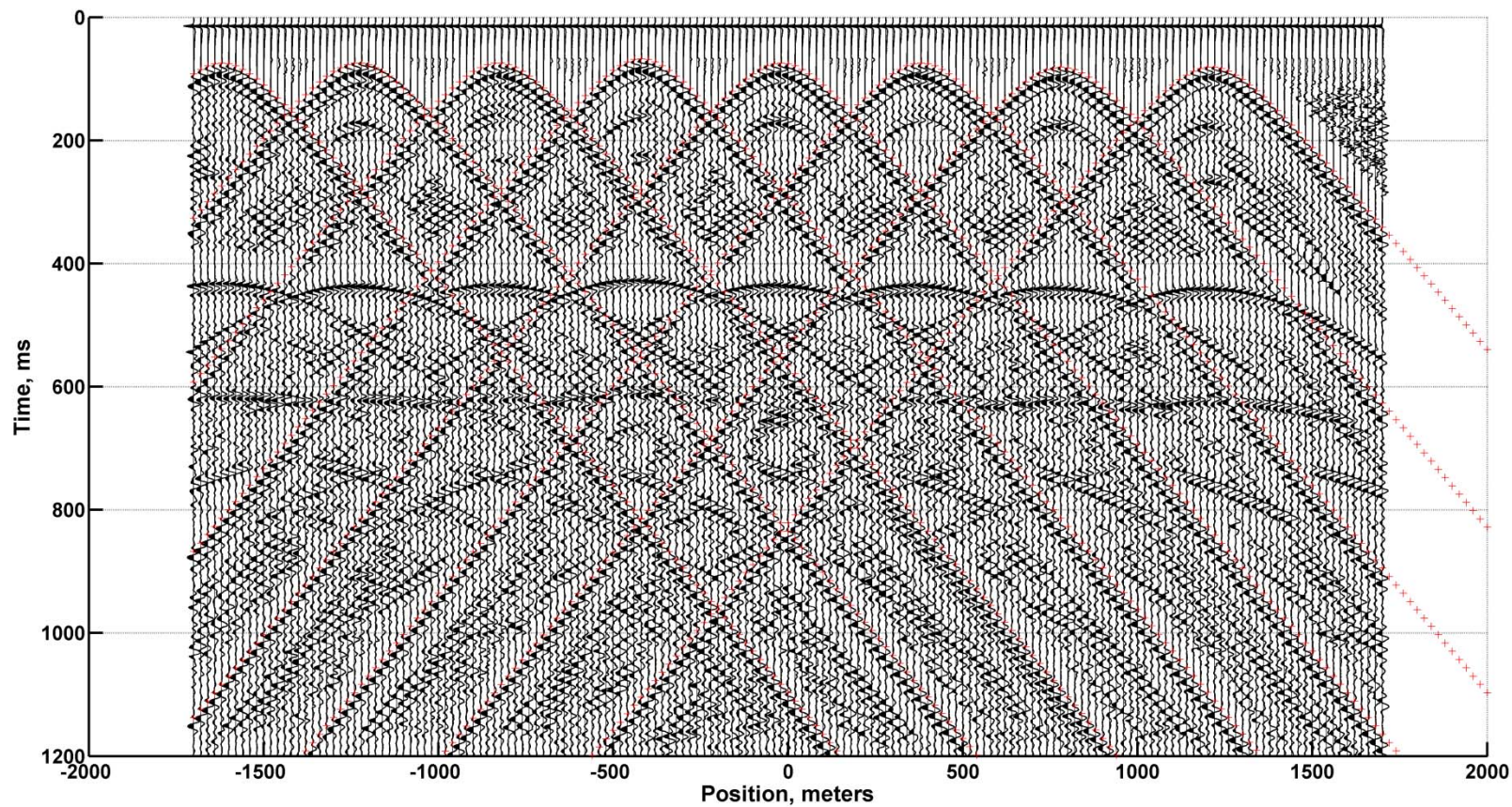
Multiple Simultaneous Sources

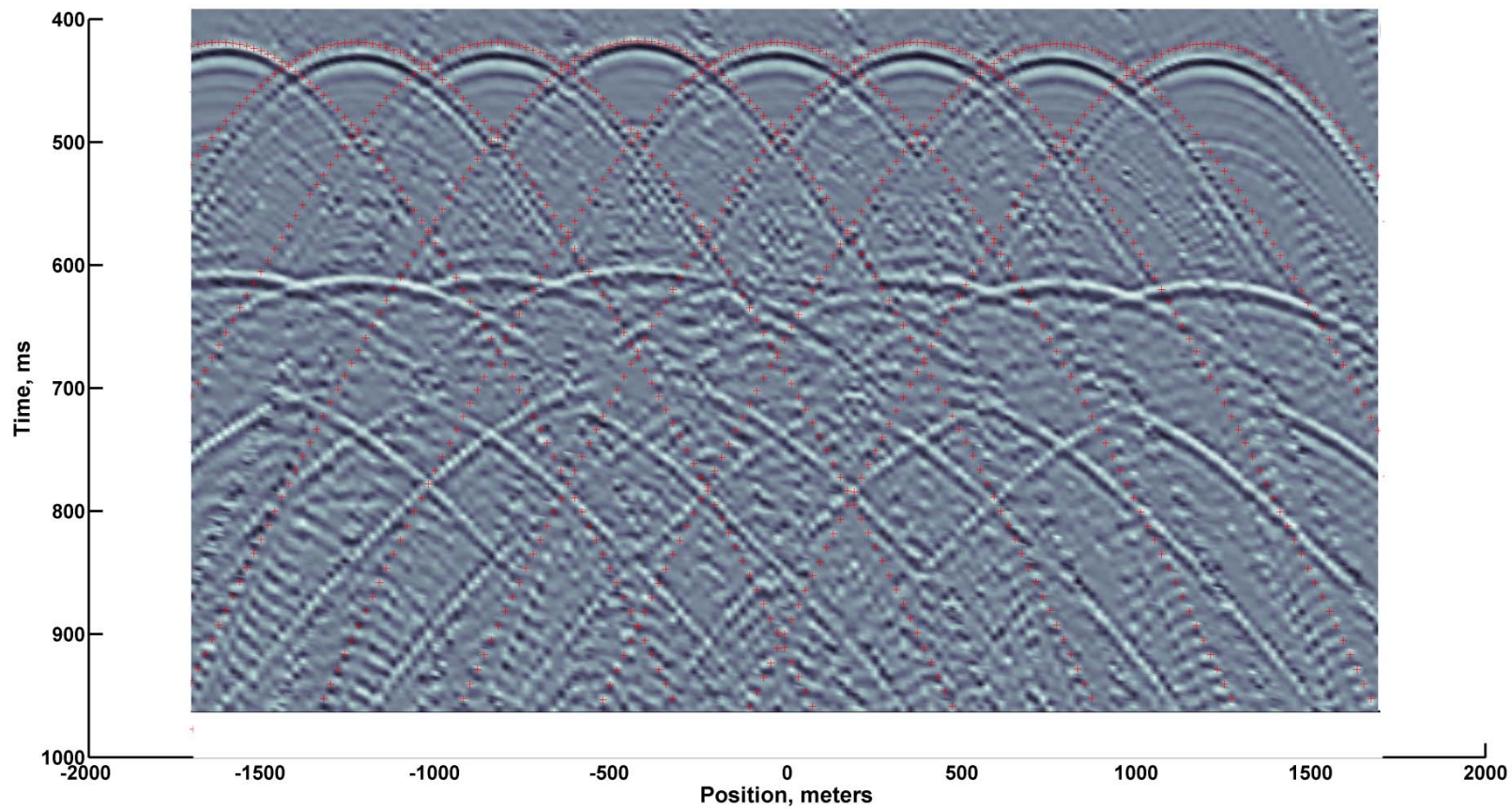


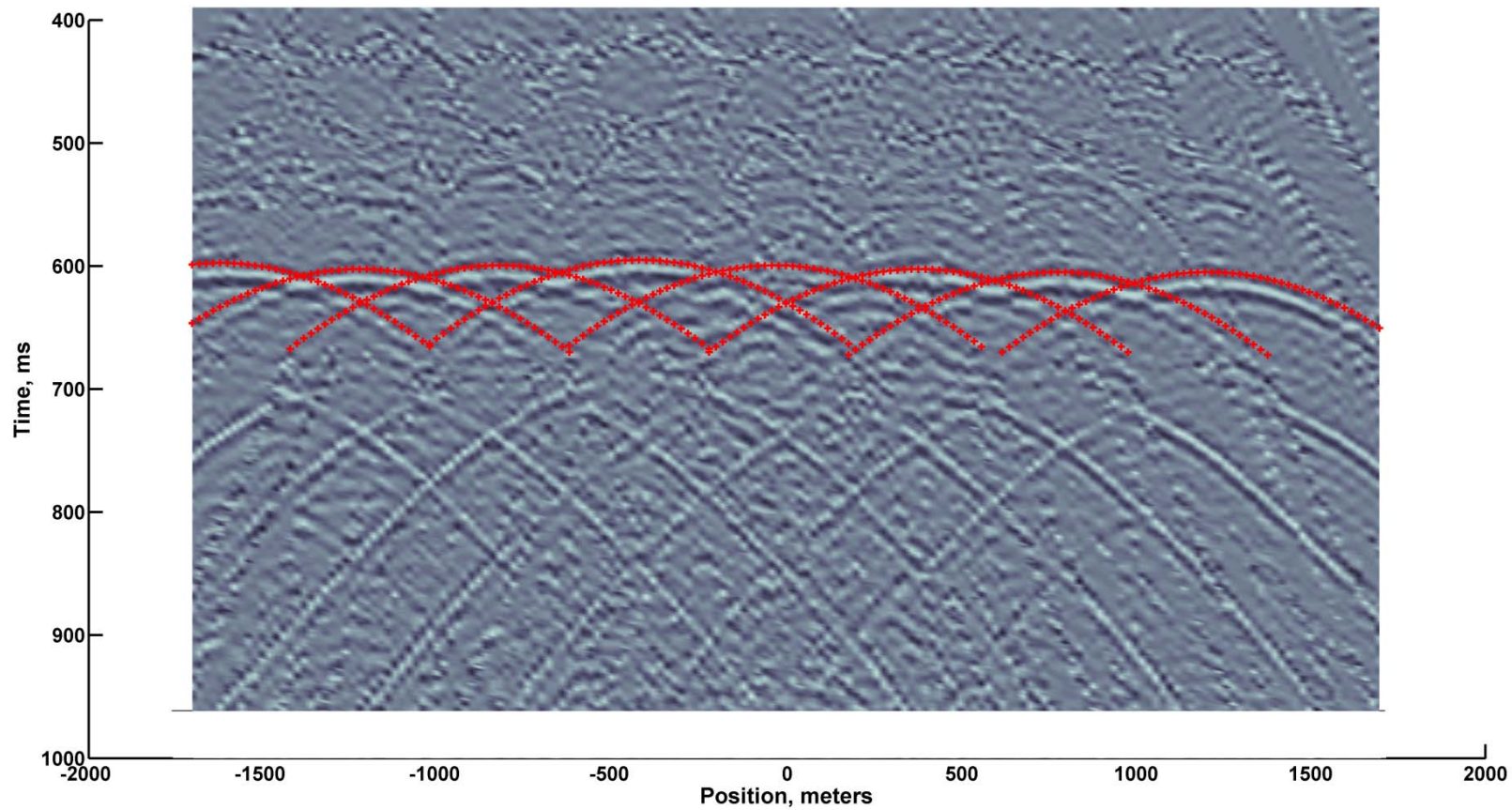


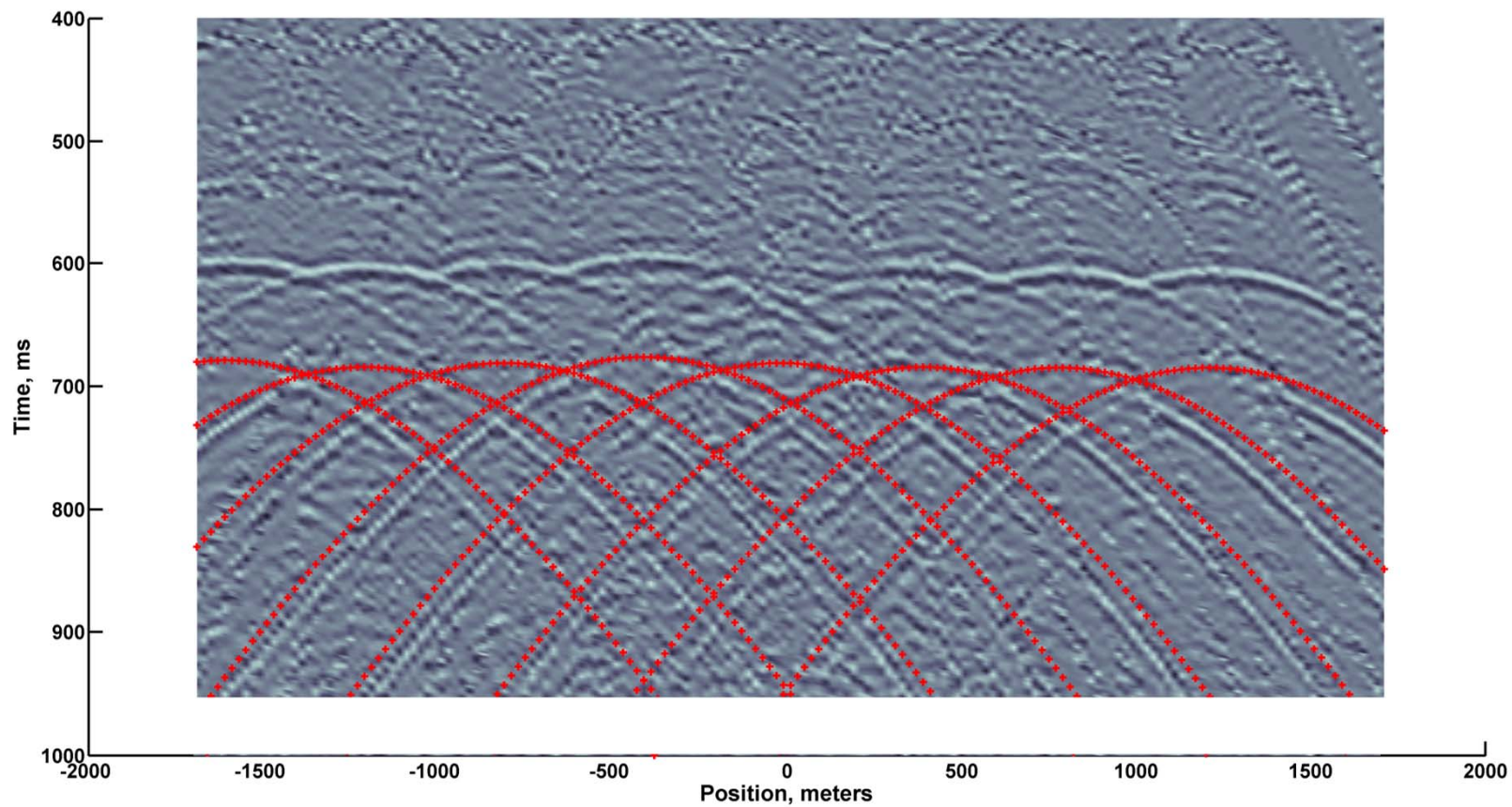


“Deblending” of Multiple Source Data



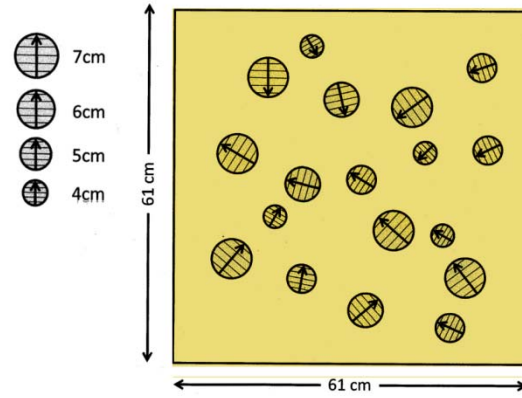




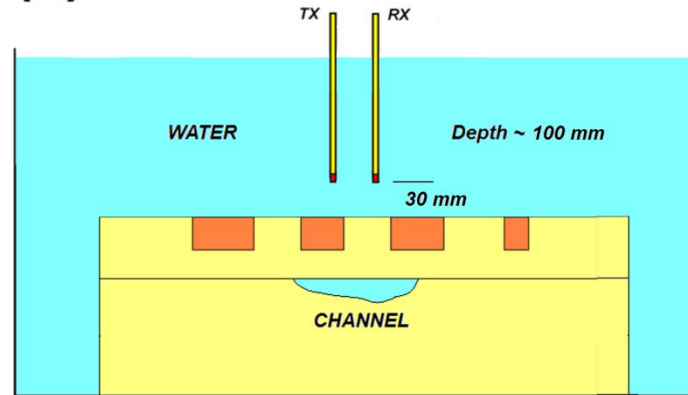


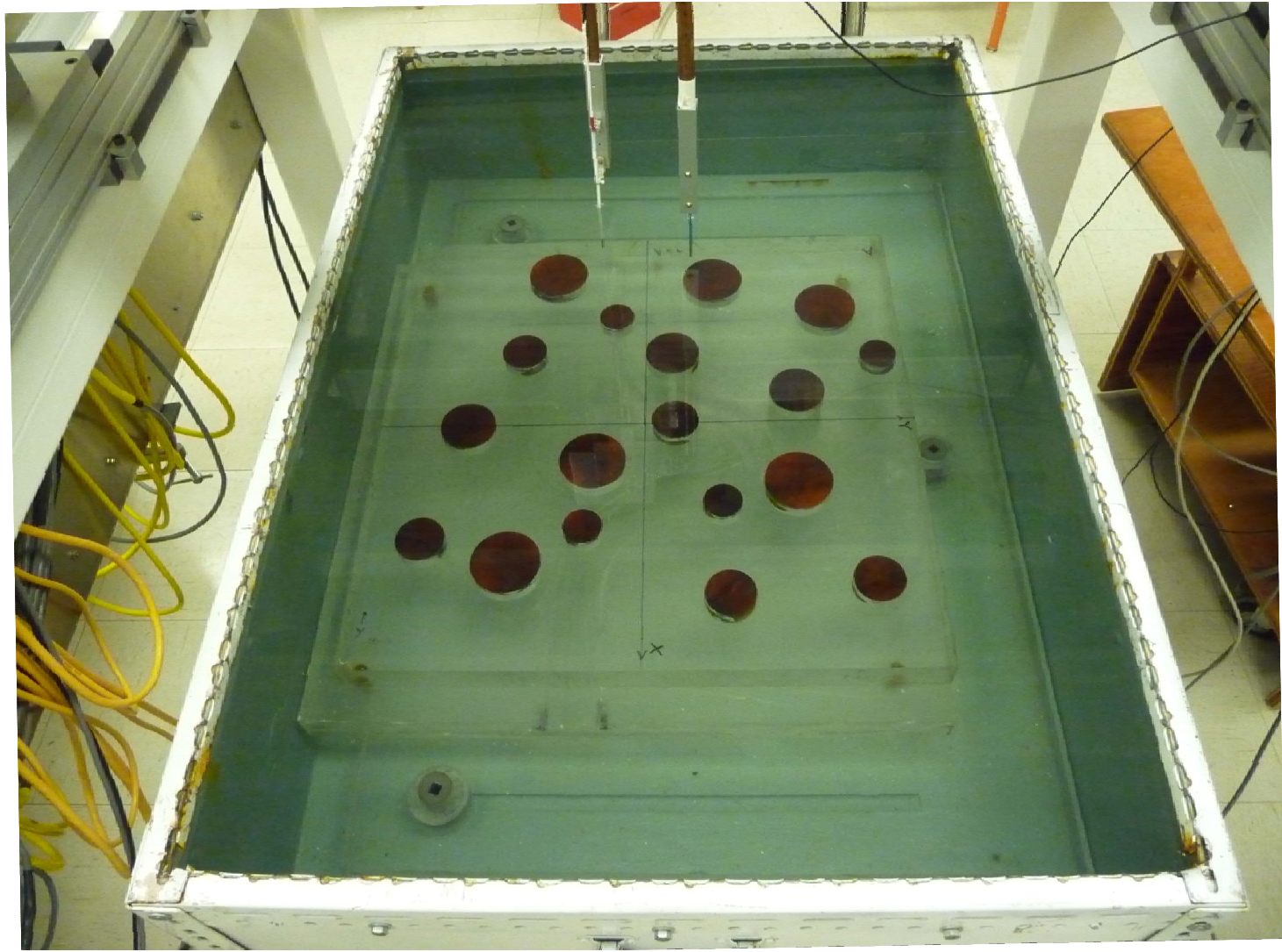
Model 3
The “Puck” Model

(a)

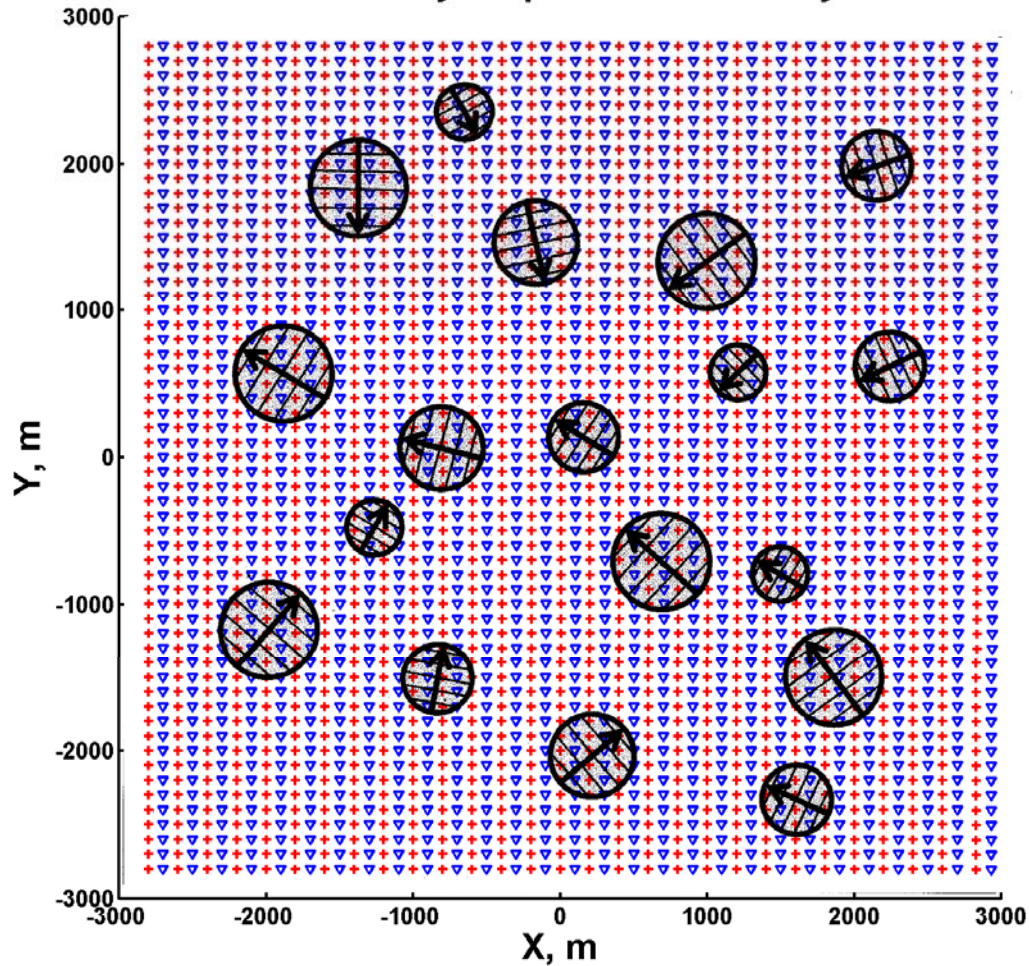


(b)

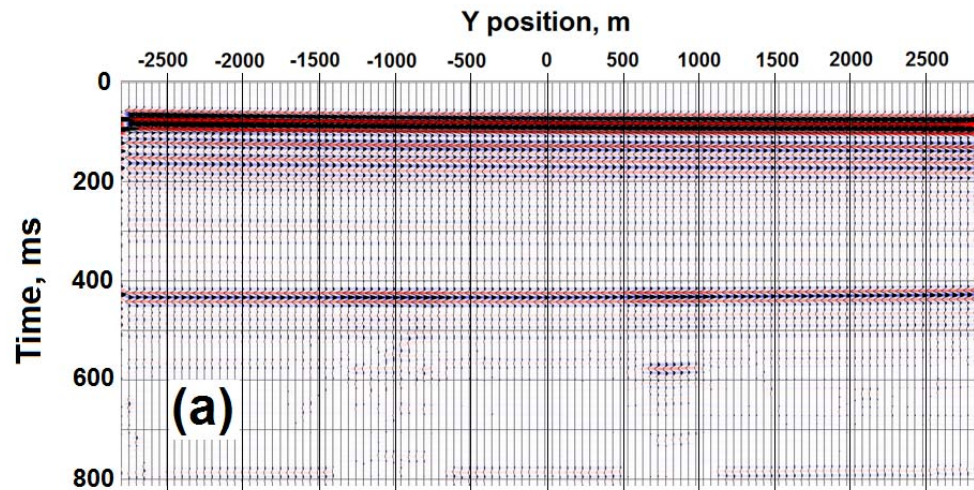




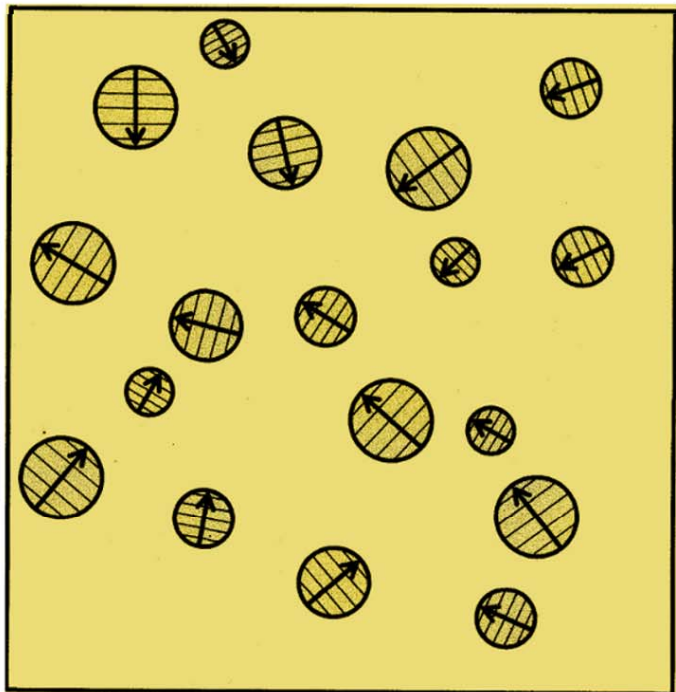
3D Survey Acquisition Geometry



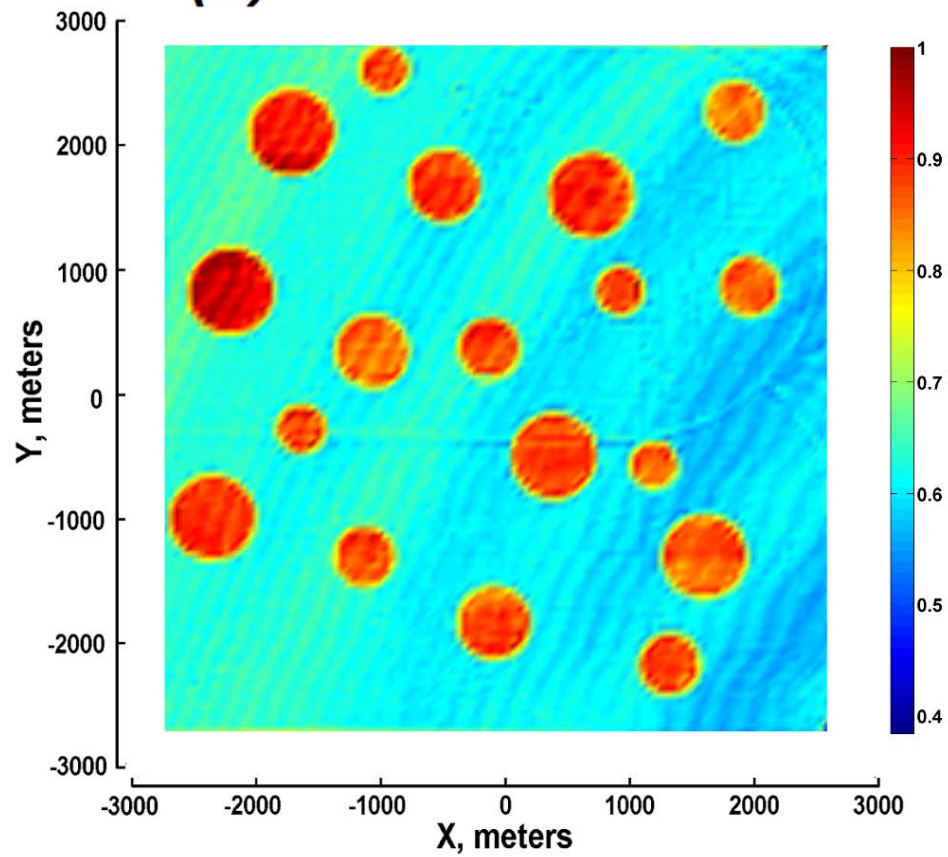
Fixed Offset 3D Survey



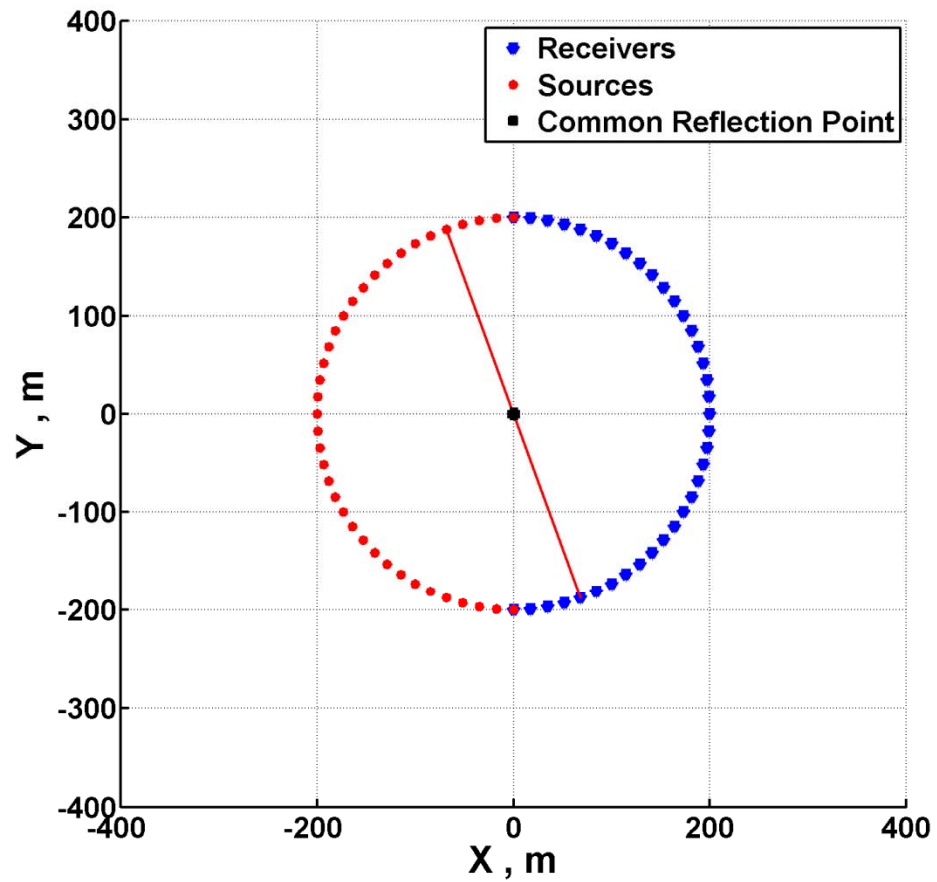
(a)



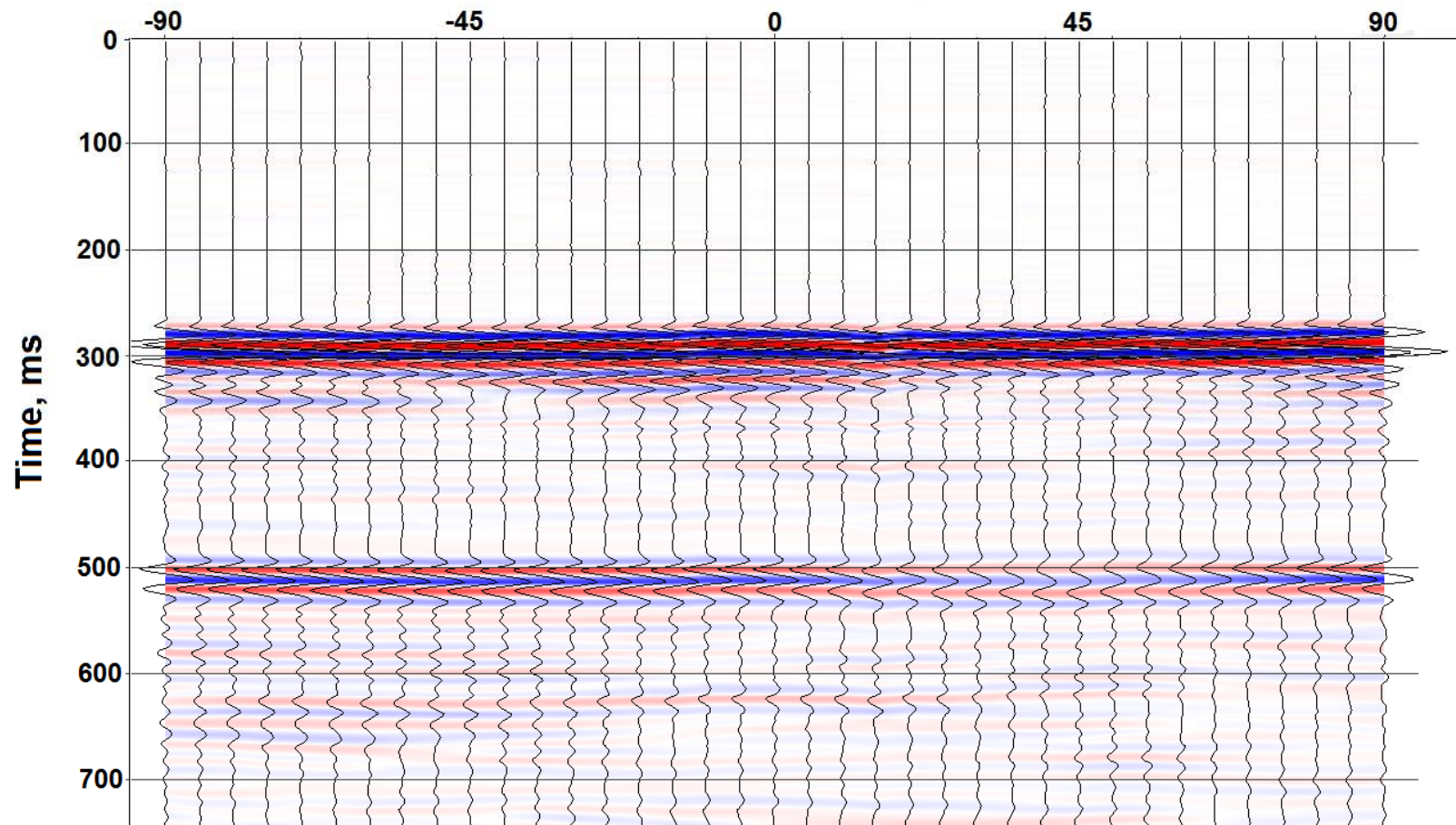
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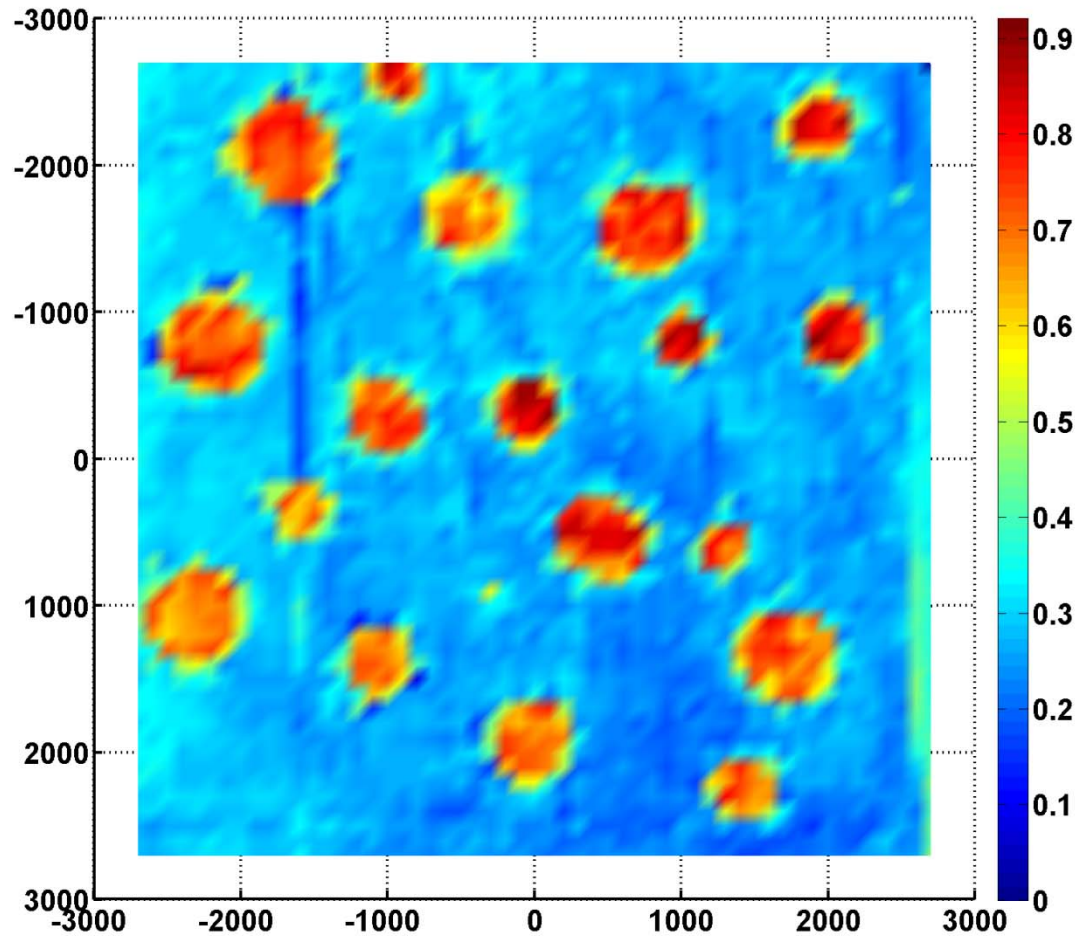


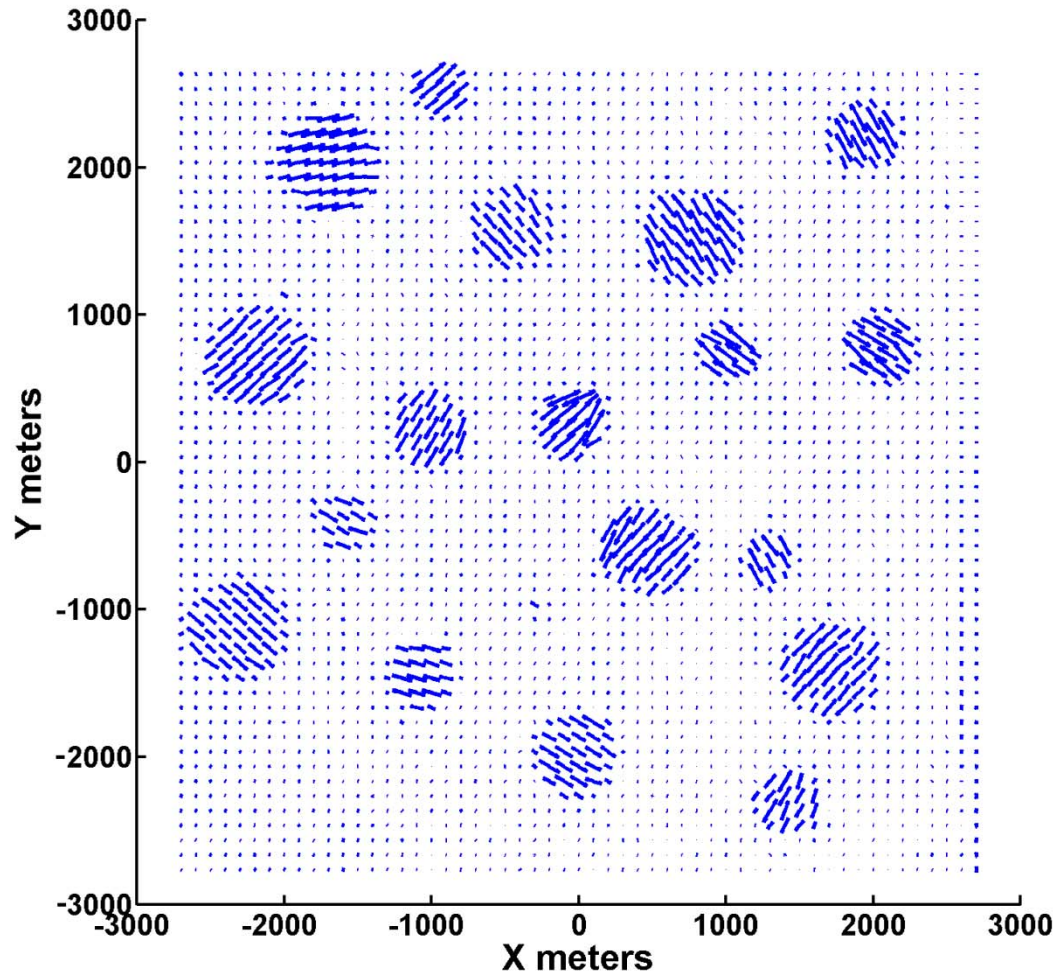
Azimuth-CRP 3D Survey



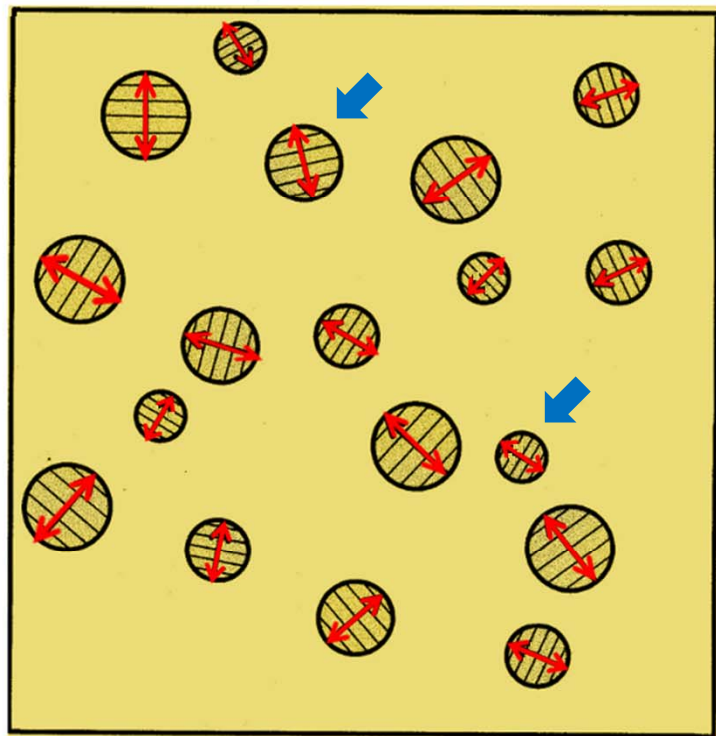
Azimuth Angle, degrees



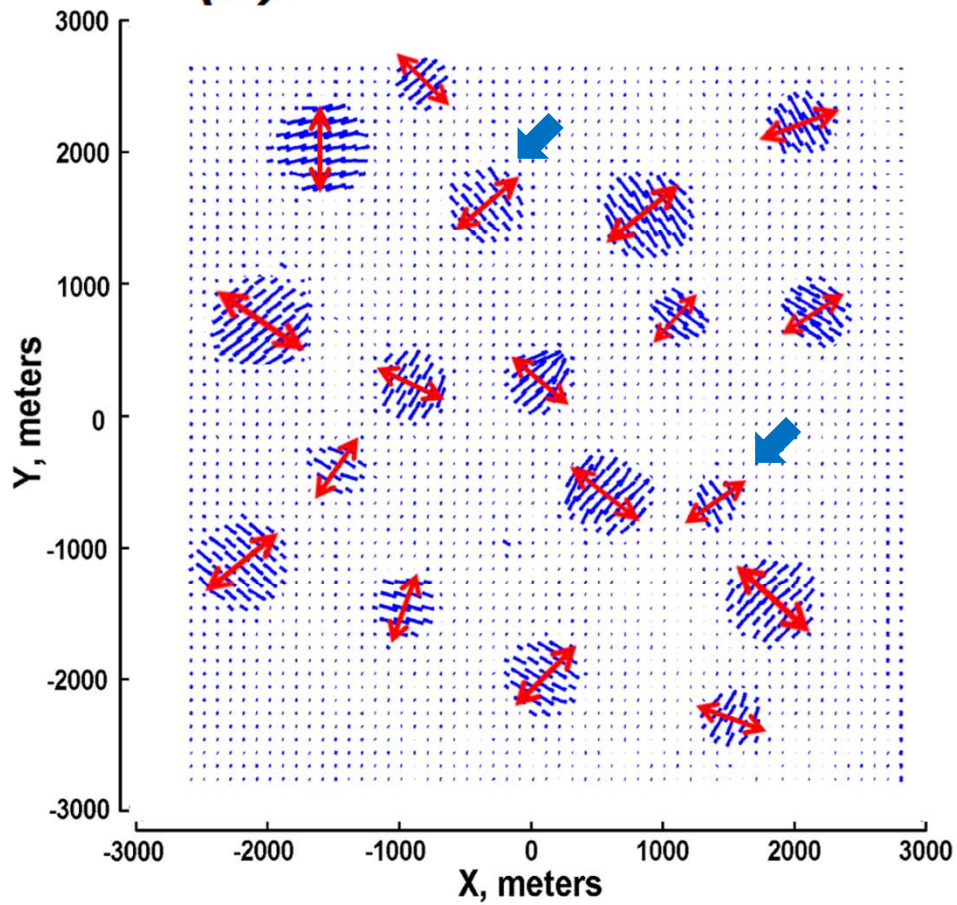




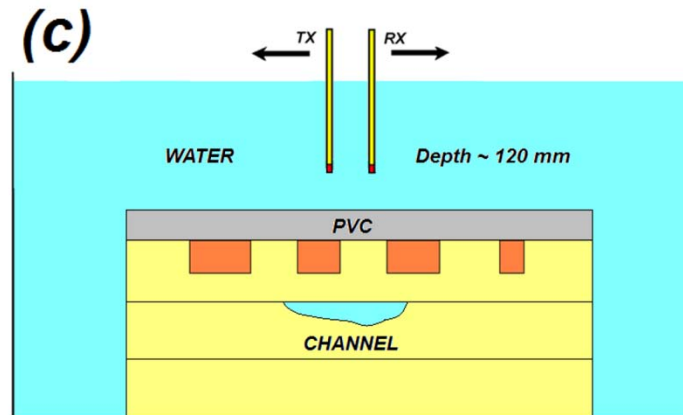
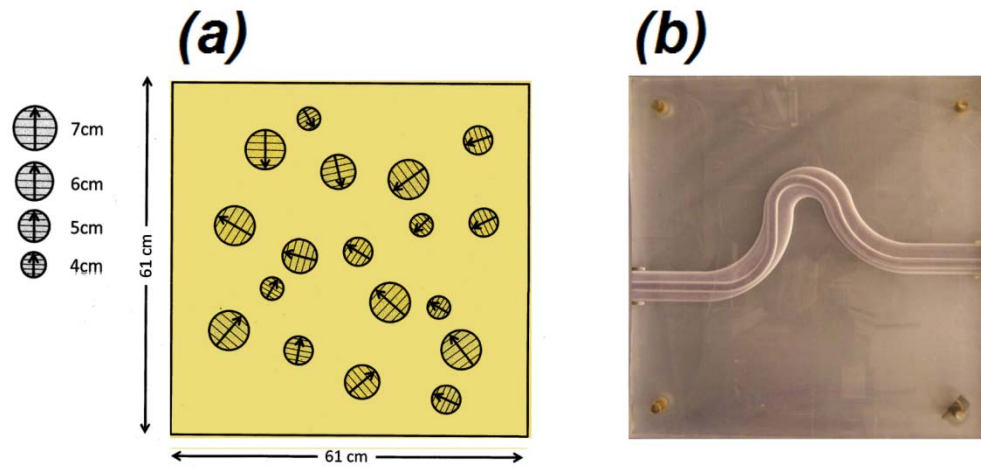
(a)



(b)



***3D Marine Survey Over A More Complex
Physical Model***



Conclusion

- *Clear VVAZ and AVAZ effects were observed in our 2D and 3D surveys over models that include HTI targets.*
- *Physically modeled 3D surveys can be conducted efficiently using multiple simultaneous sources.*
- *We will further increase 3D acquisition efficiency by upgrading to multi-channel ADC of receiver signals.*

Acknowledgement

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and the industrial sponsors of CREWES.***