Phase velocity of internal solitary waves in the Dongsha region of the northern South China Sea

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A seismic survey cruise was carried out on Dongsha Plateau in the summer of 2009. We used Seismic Unix to reprocess the seismic dataset and study the relation between ISW phase velocities with wave amplitude and corresponding water depths.

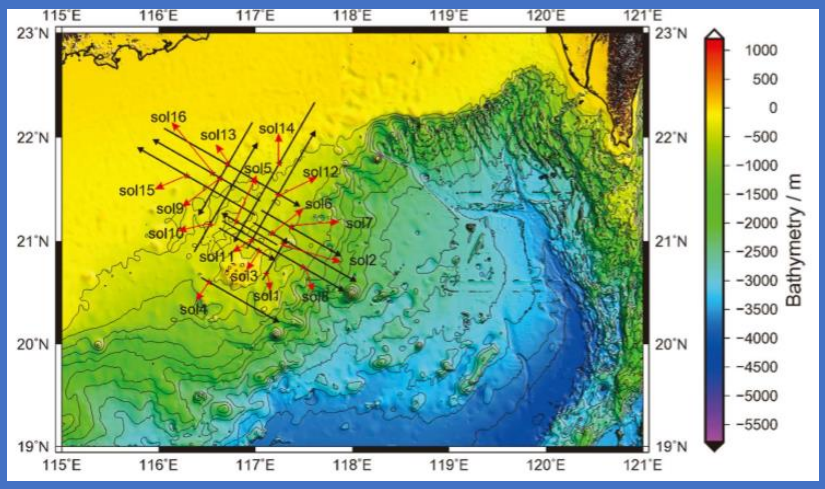

Figure 1. Distribution of multi-channel seismic data. The black lines show the survey line. The red arrows show the solitons.

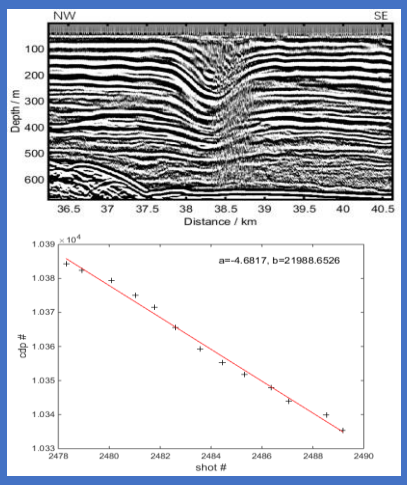

Figure 2. Seismic Stacked Section of sol7.

Figure 3. Fitting curves to calculate phase velocity of sol7.

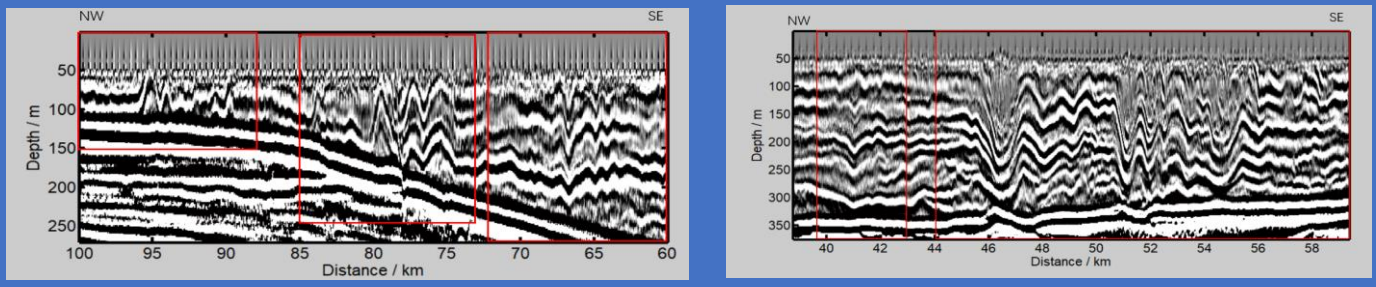

Figure 4. Internal solitary waves in seismic stacked sections

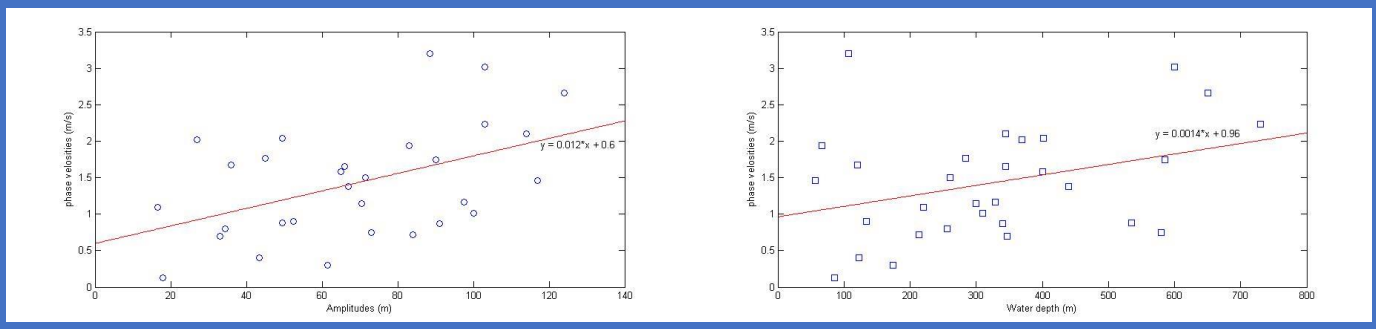

Figure 5. ISWs phase velosities versus maximum amplitudes

Figure 6. ISWs phase velosities versus seafloor depth

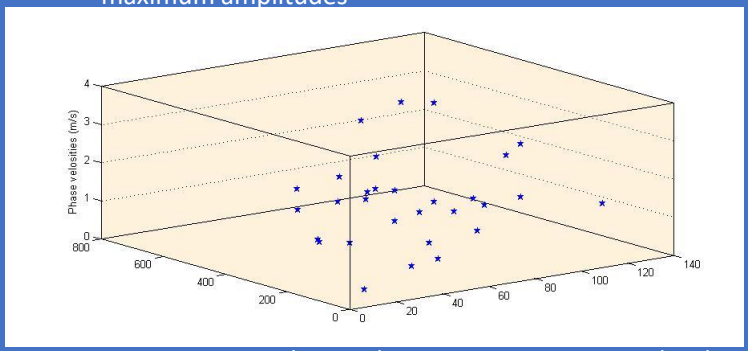

Figure7. ISWs phase velocities versus wave amplitude and corresponding seafloor depth.

$$v = 0.4409 + 0.0009\eta + 0.01dH$$

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