



Ideas for Shallow water Experiment

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Research Goals

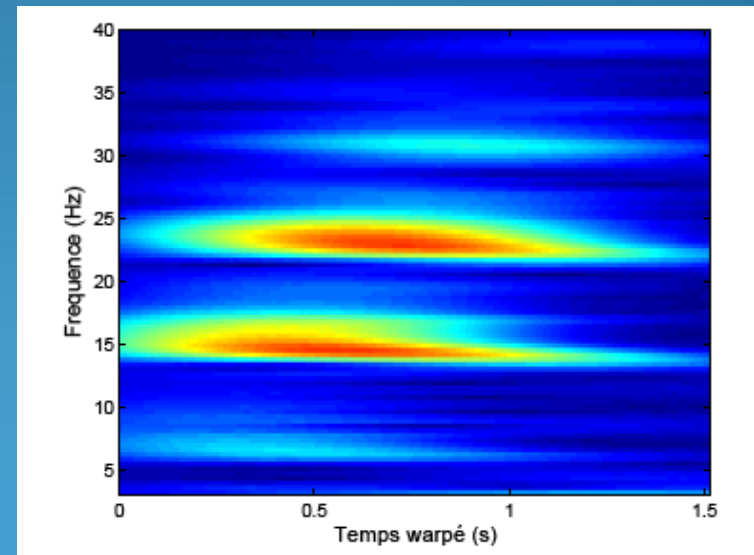
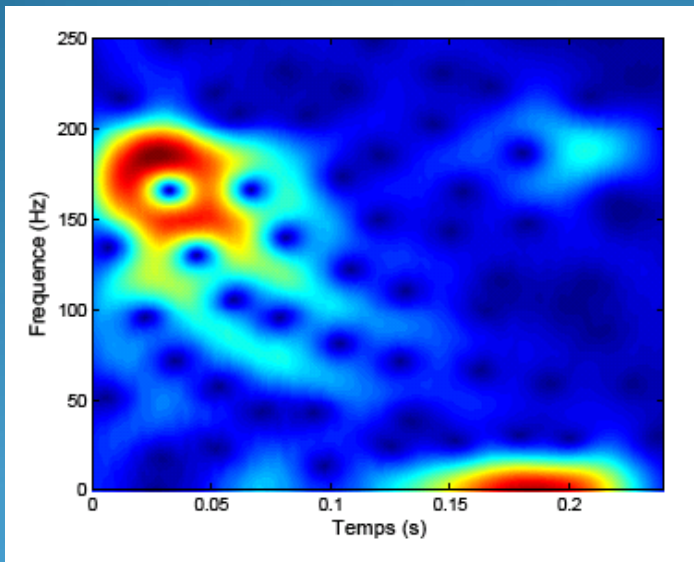
- **Experimental design:**
 - do the data contain information about the parameters/quantities you want to infer about the bottom
 - experiments that are robust to uncertain knowledge of the water column
 - Single hydrophone vs depth (ie vertical array)
 - Broadband sources: 100 – 3000 Hz
- Two sediment sites: sand and mud/silt

Research Goals

- Dispersion of sound speed and attenuation in marine sediments
 - time-frequency information
 - broadband sound sources (3kHz - CSS ?)
 - ranges to ~30 km
 - resolve higher order modes:
 - modal attenuation
- Unknowns
 - impact of shear in inversion?
 - model of sound propagation in sediments?

Research Goals

- Time-frequency warping technique
 - robust to lack of knowledge of water column profile
 - high resolution of modes at short ranges
 - SW06 example: 7 km range



Research Goals: 2

- **Performance assessment of inversion methods**
 - estimation of geoacoustic model parameters involves experimental design and inversion technique
 - assessment involves design of comparison metric
- **pressure data on vertical and horizontal arrays**
 - derive observables from pressure data
 - input for experimental design
- **Need data from Long range (30 km) TL vs range**
 - coherence



Collaborations

- **David Knobles/Preston Wilson**
 - **Broadband CSS source**

- **John Goff: chirp sonar survey data; physical property data of marine sediments**