

LNS Acoustics Group Meeting

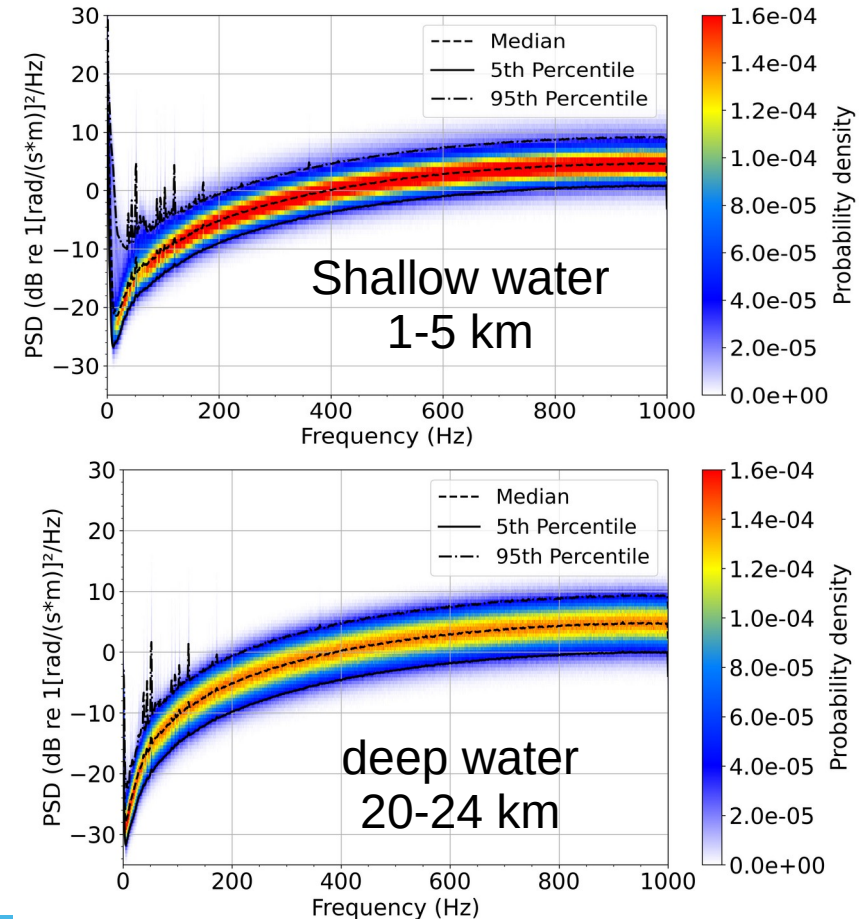
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Introduction

- Investigation of the cable response to the signals
- Variation of PSD along the cable
- The effect of frequency on the signal amplitude
- The effect of cable coupling

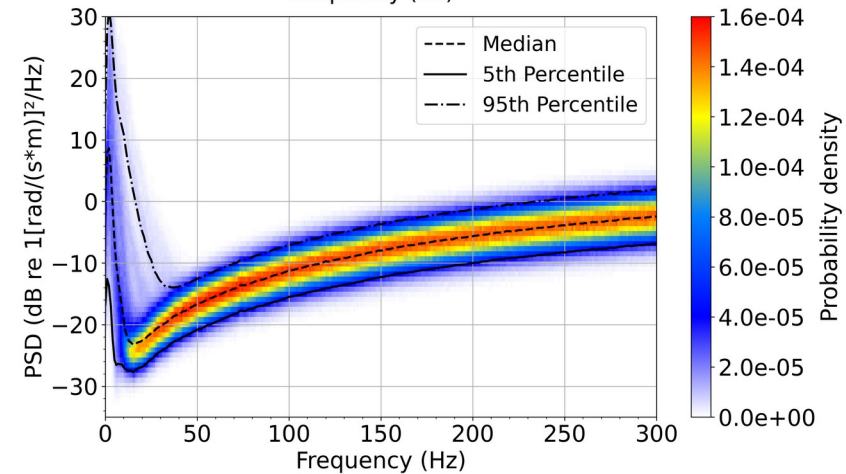
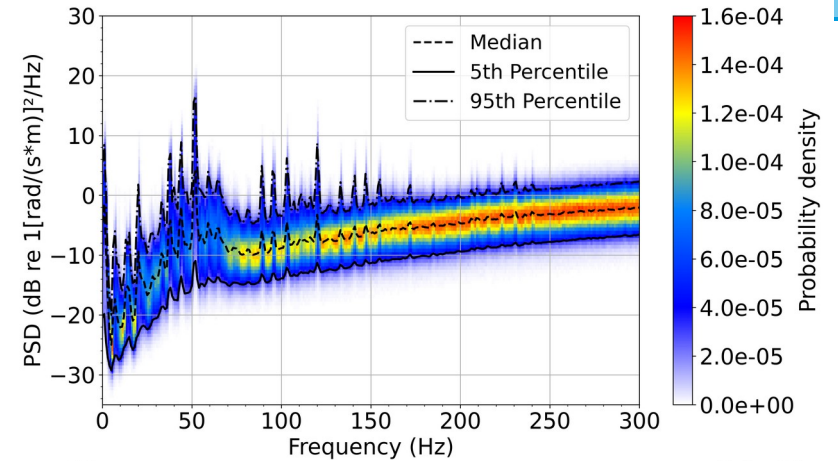
Variation of background noise

- Background noise analyzed using 10 seconds data at the beginning of each hour during one day
- In shallow water, high contribution from the surface gravity waves at low frequencies
- In both plots, important contribution from shipping noise, mainly at frequencies below 200 Hz (peaks)



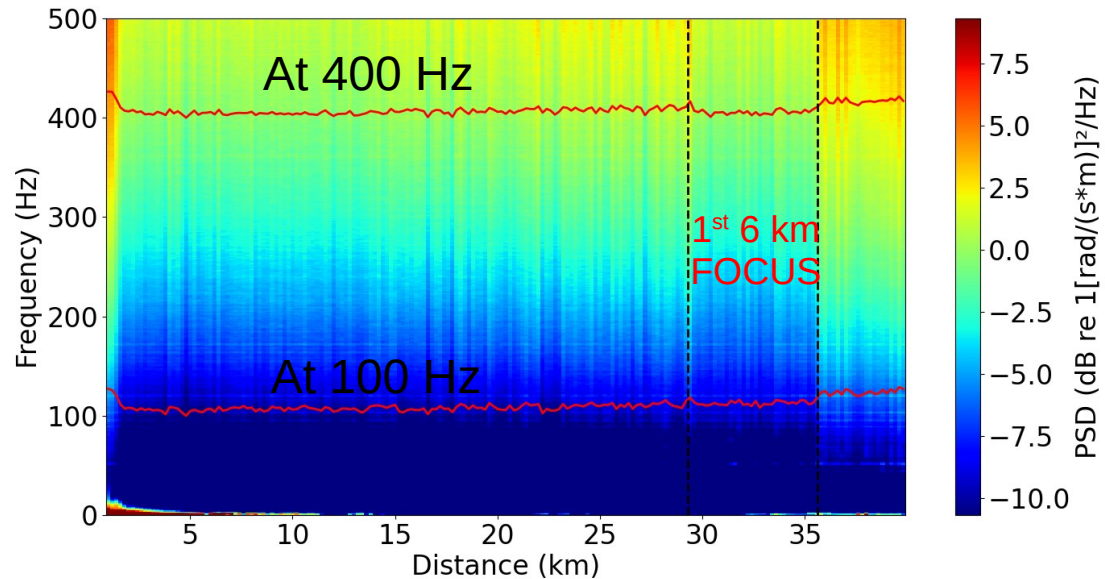
Signal induced noise

- 10 minutes of data during the passage of cargo ship and during a ML 5.1 earthquake event
- The vessel induced important increase in the noise levels in a large frequency band
- The earthquake produced an increase in the noise of up to 30 dB around 5 Hz



Signal induced noise

- Variation of noise levels along the cable using 200 m spatial resolution
- Different behavior depending on frequency and distance
- At frequencies lower than 50 Hz, almost the response is the same along the cable
- Amplitude decreases at higher frequencies in the first FOCUS loop compared to TSS cable, and the opposite in the last 6 km loop of the FOCUS cable



Next steps

- Investigate the effect of acquisition parameters such gauge length, channel spacing and sampling frequency
- Calibration and correlation with hydrophone data
- Select the same time windows and compare the frequency response of DAS with one hydrophone data