1 Two ship tracks

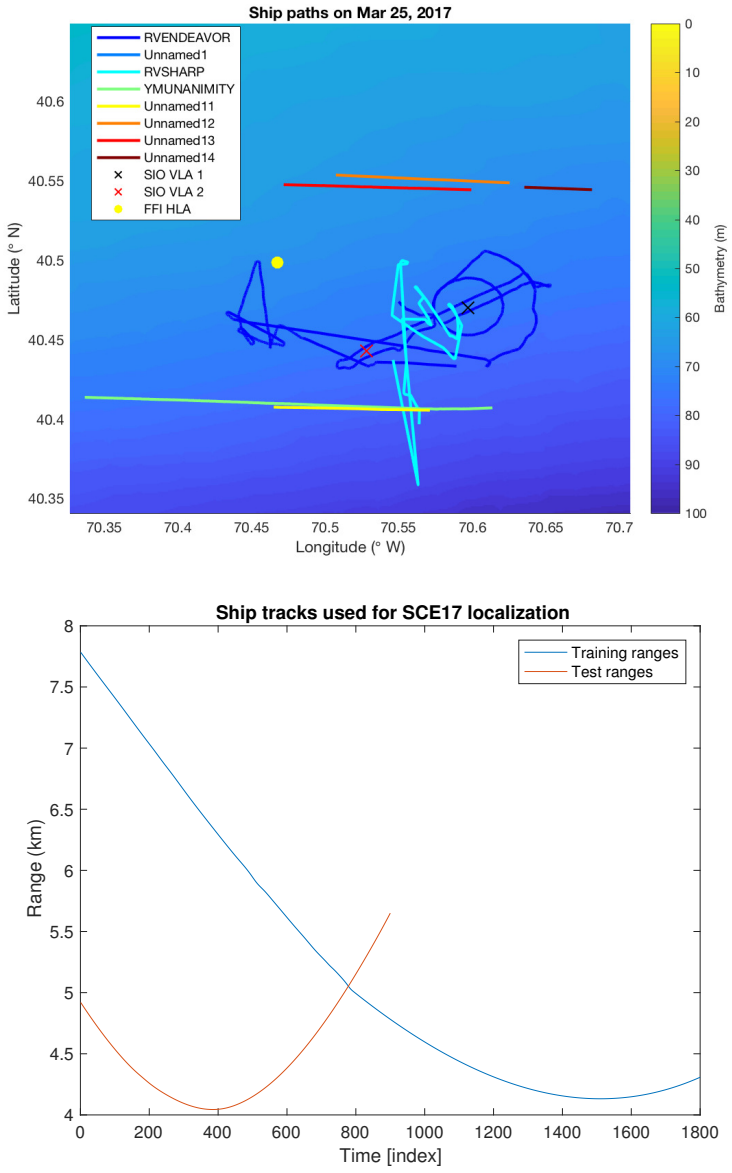

Figure 1: *Top to bottom:* The ship YMUNANIMITY (green, 09:30-10:00) was used to train and Unnamed11 (yellow, 04:10-04:25) to test the range prediction algorithms. Also shown are training and test ranges for the two ships. The data is taken from VLA2.

2 Spectrograms

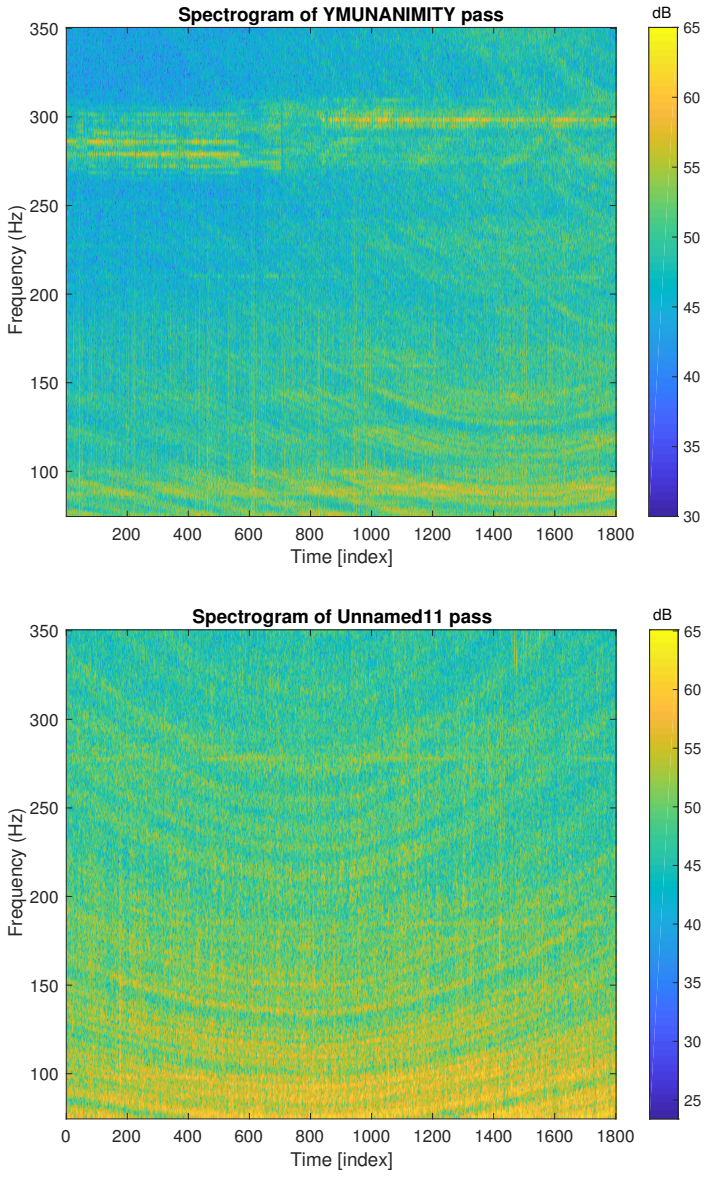

Figure 2: *Top:* Spectrogram for the ship YMUNANIMITY recorded on VLA2. *Bottom:* Spectrogram for the ship

3 Results

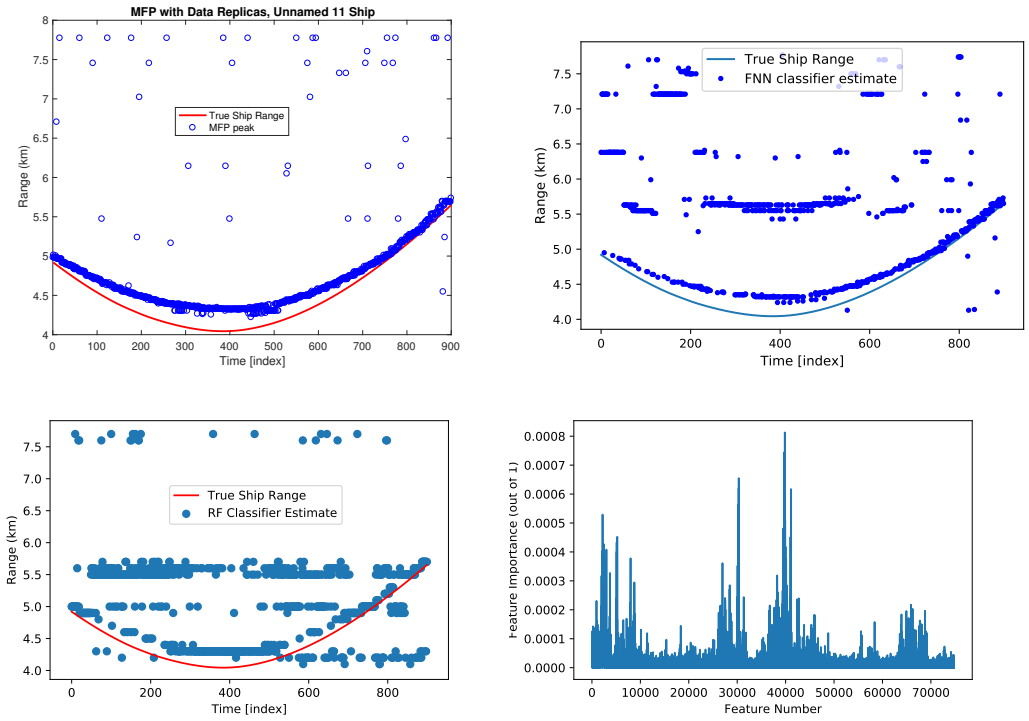

Figure 3: *Top to bottom, left to right:* Matched–field processing with the training track as the replicas, where the ambiguity peak is used as the range estimate. Feed–forward neural network estimates using classification of range bins, with 1024 hidden nodes and one dropout layer. Random forest classifier with 1500 estimators and max tree depth of 50. Feature importance from the random forest classifier. Features are arranged by correlated pairs of hydrophones top to bottom, then by frequencies 75 Hz to 350 Hz. The first half of the features are the real part of the correlation, the second half the imaginary part.