Detection and propagation range of fin whale calls off Gulf of Cadiz

Andreia Pereira[1,2,3], Danielle Harris[2], Len Thomas[2], Peter Tyack[3], Luis Matias[1]

[1]Instituto Dom Luiz, Sciences Faculty, University of Lisbon, Portugal

[2]Centre for Research into Ecological and Environmental Modelling, University of St Andrews, St Andrews, Scotland, UK

[3]Sea Mammal Research Unit, University of St Andrews, St Andrews, Scotland, UK

DCLDE WORKSHOP

San Diego, 13th July 2015

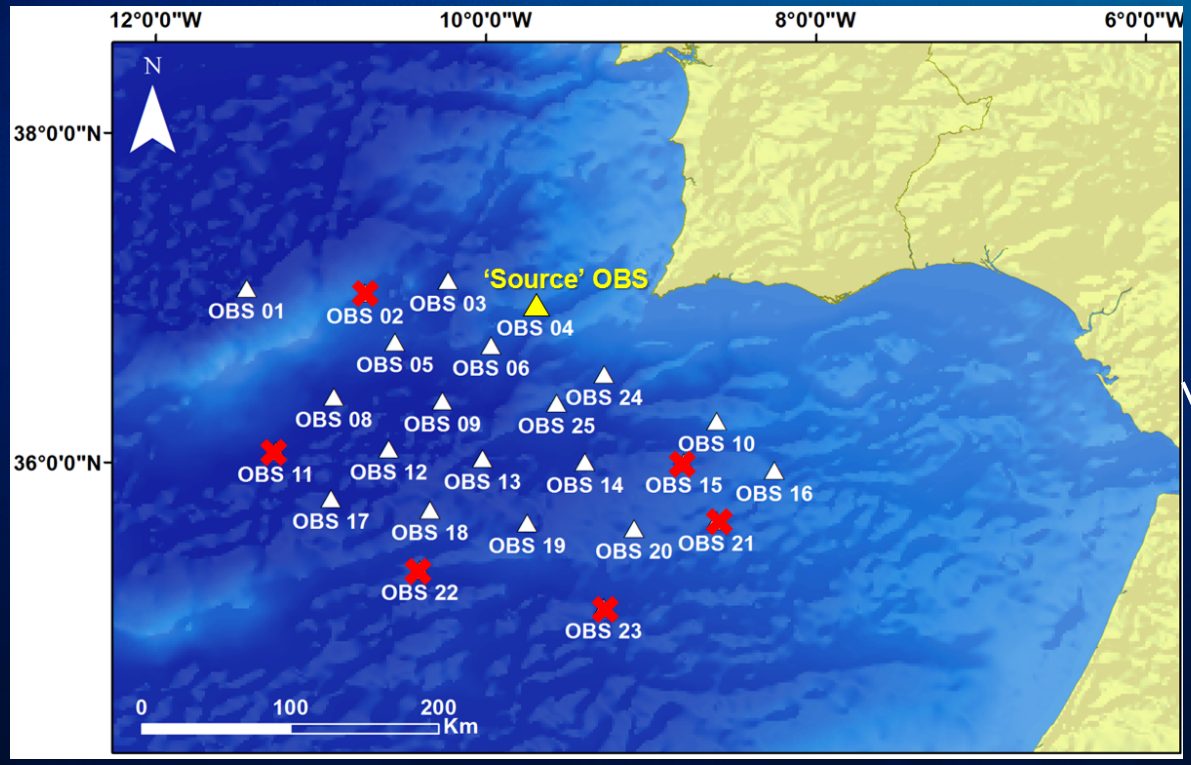
University of St Andrews

LISBOA

INSTITUTO DOM LUIZ

PD + F FCT PhD PROGRAMMES

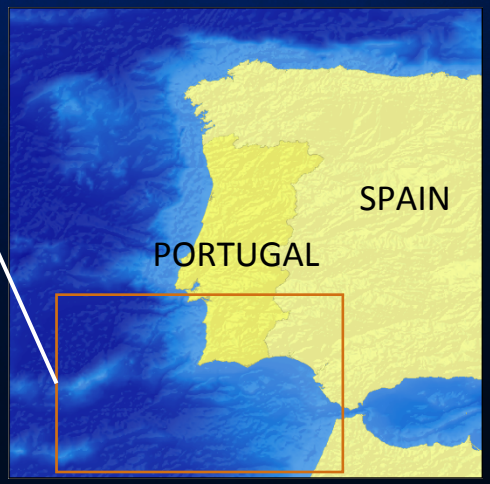
Study area and dataset



17 OBSs (out of 24)

One day of data (12/21/2007)

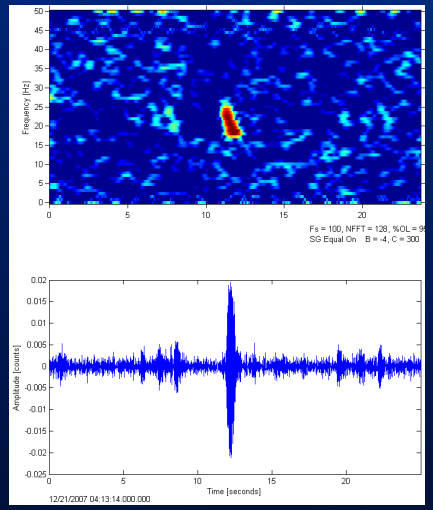
OBS04 the 'focal' instrument



Methods

- Sound detection by spectrogram correlation (Mellinger & Clark 2000)
- Sound search between OBSs limited to a 1.5 km/h sound speed

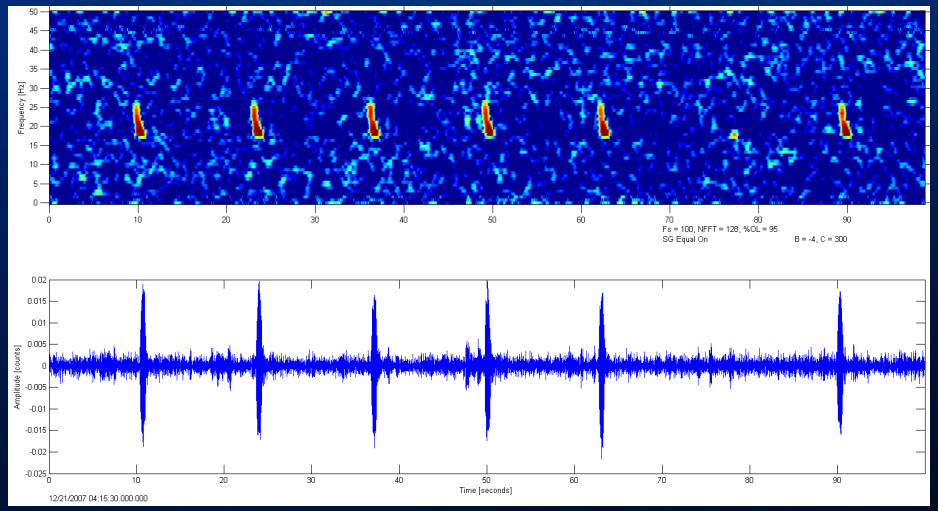
Call search



39 calls

Automated vs manual detection
'Match rate' & Regression

Sequence search



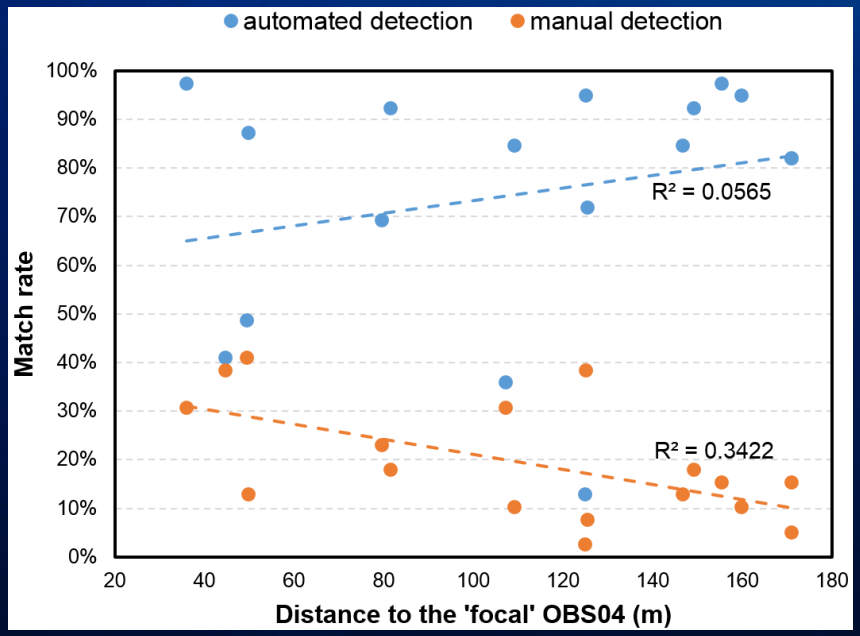
6 calls (intervals: 14, 13, 13, 13, 27)

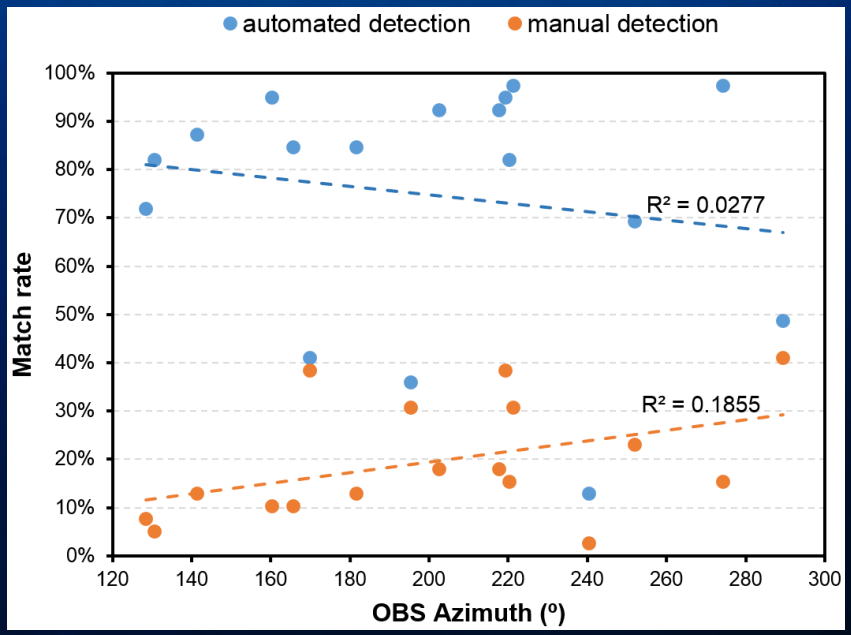
Results and considerations

1. Call detection:

Differences between automated and manual detection

Degree of directionality of fin whale call propagation





2. Sequence detection:

No detection found on other OBSs at the expected arrival time

Detection and propagation range of fin whale calls off Gulf of Cadiz

Andreia Pereira, Danielle Harris, Len Thomas, Peter Tyack, Luis Matias

University of St Andrews

LISBOA

INSTITUTO DOM LUIZ

PD F FCT PhD PROGRAMMES