

ICAR ACCESS

Name of the Institution / Company: University of Algarve (Faro, Portugal)

Applicant name and surname: Sérgio Manuel Machado Jesús

Descriptive title: Acoustic particle motion measurements on bluefin tuna in aquaculture tanks

ACRONYM: TUNAMOTION

Summary

This research aims at performing an acoustic recording experiment in a bluefin tuna aquaculture tank. The analysis of the acoustic recordings, together with other biotic and abiotic data, gathered during the experiment should allow to provide or complement the understanding of the behavior of bluefin tuna in a confined environment. In particular the experiment will provide recordings of the particle motion field at close range and low frequency where it significantly differs from the acoustic field.

Whether the knowledge of the particle acceleration field helps to explain part or some of the behavior of this specie, remains an open question, that we would like to address.

This project aims at developing, implementing and field testing the necessary methodologies to attain the following objectives:

- 1) to understand the correlation between behavior patterns and acoustic sound generation of bluefin tuna
- 2) to determine the acoustic particle motion and the sound pressure fields of a bluefin tuna shoal in a confined environment, and understand whether its behavior relies more on the information gathered through sound pressure or particle motion
- 3) to understand the impact of particle acceleration field generated by environmental noise