using Echoview. Dive angles were measured and used to calculate descent and ascent velocities using ImageJ software. Potential predators were determined by hierarchical clustering of dive metrics and classified in four groups. This study advances knowledge on detection and classification of predator dive profiles for predator-prey interaction studies using stationary platforms with echosounders.

Acoustic Characterization of Marine Organisms

Abundance estimates of micronekton organisms in tropical Pacific Ocean from trawl sampling, acoustic survey & backscatter models

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Micronekton, ubiquitous to all oceans plays a pivotal role in the trophic organisation and constitutes the food of most top predators. Due to the paucity of sampling, estimates of these organisms abundance and specie distribution is largely unknown. Such sampling comes either from trawls or active acoustic. One key question remains on how these two means of observations compare and complement each other. Our study focuses on the analysis of active acoustic data from 8 oceanographic surveys in South Pacific. Two active acoustic methods were used simultaneously: hull-mounted echo sounders and a wideband profiler. These data are examined together with biological samples obtained by trawling which brings a ground truth to the acoustic measurements. By comparing the *in situ* acoustic response, the modelled response from biological sampling and the density of organisms calculated from wideband profiles, we obtain an order of abundance estimates of micronekton in depth layers. This comparison enables us to estimate the observed differences of organisms abundance between the three methods and helps understanding. Over the entire cruises, the average ratio between abundances derived from acoustic sounders and those obtained from trawled samples is on the order of 10 but varies strongly with depth.

A DWBA based fluid shell model towards improved modelling of weakly scattering organisms

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