Quantifying the spatial structure of fish aggregations around FADs at the micro- and mesoscale from field-based modeling and acoustic data analysis

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Résumé

Understanding and quantifying the spatial structure of fish aggregations around FADs is crucial for assessing the impacts of FAD deployment and their management. In this talk we show recent results, based on modeling coupled to HTI acoustic telemetry experiments on small pelagic fish (Selar crumenophthalmus) around an anchored FAD, quantifying the main interactions playing a role in fish aggregations. Within our picture, the fish aggregation radius is modulated by the mutual contribution of social interactions and individual swimming speed. Our approach provides an explanation for the spatial structure of fish aggregations found around FADs and allows predicting the aggregation radius for different species. Finally, we discuss possible roles played by the range of fish excursions out of the FAD in shaping the distribution of fish over a full network of FADs.

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