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Theme: Modelling

Session: WeC4 - Marine Protected Areas (MPA) & spatial modelling

Title: **A Spatial Model of Dolphin Avoidance in the Eastern Tropical Pacific Ocean**

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Abstract: Eco-labeling has been touted as a way for consumer preferences for environmentally benign products to be transmitted in markets. The label, as the argument goes, provides information to consumers who may then pay a price premium for the labeled products. Producers view demand for the eco-labeled products as quality differentiated and defined by the producer's production method. With a high enough price premium for the green good, producers may alter production practices to meet labeling certification requirements. This paper examines the impact of dolphin-safe tuna labeling on fishermen's production practices and spatial choices in the Eastern Tropical Pacific Ocean (ETP hereafter). To examine this question, a model of fishing that links fishermen's spatial choices during a cruise is developed. This model is premised on the assumption that fishermen choose an optimal cruise trajectory and do not make spatial decisions myopically.

The dynamic site choice model reveals a markedly higher impact on producers as compared to the commonly used static model following the dolphin-safe tuna labeling regime. In addition, our model generates dynamic estimates of fishermen's WTP to avoid dolphin prior to and following the implementation of dolphin safe tuna labeling and remarkably different estimates of fishermen's WTP to alter fishing production practices within the fishery. Further, in all but a few cases the common practice in dynamic choice models of setting discount factors equal to one is rejected.