Mathematics
Seminar

Sources, sinks, and sea lice: determining patch contribution and transient dynamics in marine metapopulations

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Abstract: Sea lice are salmon parasites which threaten the health of both wild and farmed salmon. Open-net salmon farms act as reservoirs for sea lice in near coastal areas, which can lead to elevated sea louse levels on wild salmon. With a free-living larval stage, sea lice can disperse tens of kilometers in the ocean, both from salmon farms onto wild salmon and between salmon farms. This larval dispersal connects local sea louse populations on salmon farms and thus modelling the collection of salmon farms as a metapopulation can lead to a better understanding of which salmon farms are driving the overall growth of sea lice in a salmon farming region. In this talk I will discuss using metapopulation models to specifically study sea lice on salmon farms in the Broughton Archipelago, BC, and more broadly to better understand the transient and asymptotic dynamics of marine metapopulations. No ecological background will be assumed, and despite the biological motivation there will be plenty of mathematics in the talk.

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