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Three dimensional travelling waves under ice generated by a moving disturbance

Tuesday 28 May 2024 11:30 (30 minutes)

In this talk, we explore solutions to models describing waves under ice generated by moving disturbances such as trucks moving on ice that is frozen on top of large bodies of water. We start by showing how the problem can be reformulated in surface variables, reducing the number of unknowns and resulting in a nonlinear integro-differential system of equations. To solve these equations, we use an iterative solver whose convergence is sped up by a novel hybrid preconditioner. Finally, we examine different regimes such as varying pressure distributions, heterogeneities in ice as well as a bottom topography, and present how these influence the types of solutions we obtain.

Presenter: TRICHTCHENKO, Olga (University of Western Ontario)

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