Integrating coastal and ocean modelling with risk in the maritime industry
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At the last ACOMO workshop we outlined a program of work to develop high resolution wave and current models to support the maritime regulators and industry in Australia, with the system developed with the Australian Maritime Safety Authority (AMSA) and supported by data from the IMOS network. In this presentation we will outline the next extensions of this baseline work, which uses the underlying modelled waves and currents to form the basis for managing risks associated with the shipping industry. This includes both strategic and operational planning tools that assist with the management of vessel grounding risks and collision risks. We will demonstrate the development and operation of a “live drift detection” system, now in use by AMSA, which considers all active vessels in Australian waters over 100m in length and determines whether they are drifting without power. Drift detection is based on combining modelled currents and winds with vessel specific drag curves and combining the modelled waves with a 3D potential flow solver in order to accurately model drift trajectory. Operational responses are then implemented to minimise both risk of unpowered vessel groundings and the cost of response to potential unpowered groundings through early intervention.