



## **Ice growth and oceanic buoyancy forcing**

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There is a broad awareness that the sea-ice growing from the polar oceans is much less saline than the ocean from which it formed, and hence dense saline water is delivered to the mixed layer. However, due to the multiplicity of scales involved, from the crystallographic to the viscous sublayer to the mesoscale, the quantitative prediction of the large scale implications is a challenging task. We describe a program of systematic laboratory experiments in which both the ice/ocean brine fluxes and the mixing in the associated density currents are quantified using a variety of optical and particle imaging methodologies. The approaches described provide a benchmark for field and modelling studies.