

*Lunch seminar:*

**Confirming the role of sea-ice brines in carbon sequestration: A cold, dark journey**

Whereas brine rejection during sea-ice formation is known to contribute to global deepwater formation, evidence for CO<sub>2</sub> sequestration in association with that process has been elusive. A number of field expeditions in the Arctic over the last 15 years, including high temporal resolution observations at a cabled observatory in the Canadian Arctic Archipelago, have provided circumstantial evidence that sea-ice brine export injects CO<sub>2</sub> into the underlying water. Laboratory studies have confirmed this CO<sub>2</sub> export, including more carbon rejection when the ice forms slowly at relatively high temperatures. Our laboratory experiments indicated a potential for brine injection deeper into the water column, when ice is formed more quickly at lower temperatures, but the question remains as to how effective sea-ice brine export is in sequestering CO<sub>2</sub> in deep waters and over what time scales.

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