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Hydrographic measurements in Jökulsárlón lagoon, Iceland
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Jökulsárlón lagoon is an enclosed lake bordering the Breiðamerkurjökull glacier. Close to Breiðamerkurjökull glacier the contribution from melting ice is clear. By considering the conservation of heat and salt in a volume of water close to the ice, we can derive equations for the gradient of a line in the vertical direction, which sampled to the lake bed. Circles did not. The blue shaded region represents water >100 m depth. Blue is the track on day 1, red day 2, green day 3.

In April 2012 we conducted four hydrographic sections to determine the early season hydrographic structure of the Jökulsárlón lagoon. We visited the ice face over three days. The map on the left shows the Jökulsárlón Atlantic Water. The data here show that saline water enters the lagoon every day. The warmest and coldest water in Jökulsárlón lagoon were adjacent to the Breiðamerkurjökull glacier.

The section at depth levels reveals that surprisingly the warmest water sampled in the lagoon was in the very near surface and adjacent to the ice face. By 9.5 m the signature of this warm water had gone. We sampled the lagoon over three days. The map on the left shows the Jökulsárlón Atlantic Water. The data here show that saline water enters the lagoon every day. The warmest and coldest water in Jökulsárlón lagoon were adjacent to the Breiðamerkurjökull glacier.