

## Circulation of water masses in the Baltic Proper revealed through iodine isotopes - DTU Orbit (07/08/2016)

### Circulation of water masses in the Baltic Proper revealed through iodine isotopes

Tracer technology has been used to understand water circulation in marine systems where the tracer dose is commonly injected into the marine waters through controlled experiments, accidental releases or waste discharges. Anthropogenic discharges of <sup>129</sup>I have been used to trace water circulation in the Arctic and North Atlantic Ocean. Here, <sup>129</sup>I, together with <sup>127</sup>I, is utilized as a tracer of water pathways and circulation in the Baltic Sea through collection of seawater depth profiles. The results indicate the presence of <sup>129</sup>I signatures which are distinct for each water mass and provide evidence for: (1) inflow water masses through the Drogden Sill that may reach as far as the SW of the Arkona Sea, (2) a portion of North Atlantic water in the bottom of Arkona basin, (3) cyclonic upwelling which breaks through the halocline in a pattern similar to the Baltic haline conveyor belt and (4) more influx of fresher water from the Gulf of Finland and Bothnian Sea in August relative to April. These findings provide advances in labeling and understanding water pathways in the Baltic Sea.

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