Freie Universität Berlin

Geowissenschaftliches Kolloquium

Tracing Atlantic waters in the Arctic and North Atlantic oceans using long-lived radionuclides (^{129}I and ^{236}U)

Donnerstag, 13. Juni 2019 - 16.15 Uhr

Núria Casacuberta Arola
ETH Zürich

Long-lived artificial radionuclides have been incorporated to the marine environment following the atmospheric weapon tests in 1950's and 1960's and as direct releases from nuclear reprocessing plants. In Europe, Sellafield (UK) and La Hague (France) have discharged significant amounts of I-129 and U-236 over the last 60 years and these point-like sources are used today to understand the circulation of Atlantic Waters in the Arctic Ocean. By combining the input functions of I-129 and U-236 from the different sources we can determine the circulation time-scales and distribution of Atlantic Waters in the Eurasian and Amerasian Basin and even trace their signal back in the Fram Strait and sub-polar North Atlantic Ocean.

Núria Casacuberta Arola studied Environmental Sciences at Autonomous University of Barcelona. After she finished her thesis on natural radioactivity in industrial processes in 2011 (UAB), she moved her research area from the industries to the oceans, and from natural radionuclides to artificial ones. In 2013 she was awarded with an ETH postdoctoral fellowship, that allowed her studying the potential of using U-236 as a new oceanographic tracer. Today, she continues her accademic career at the Laboratory of Ion Beam Physics (ETH Zurich).

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Institut für Geologische Wissenschaften
Großer Hörsaal (C.011), Haus C
Malteserstrasse 74-100
12249 Berlin

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