



Pisa, 24–28 May 2021

# ABSTRACT BOOK

a cura della Società Geologica Italiana

Dipartimento  
di Scienze della Terra,  
Università di Pisa, Italia

Pisa, Italy  
**PALAEOARC**  
2021  
24th - 28th May, 2021

2<sup>nd</sup> International Conference on  
'Processes and Palaeo-environmental changes in the Arctic:  
from past to present'



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## Paleontological and sedimentological evidences in the Holocene sedimentary record of the Bellsund Drift (Svalbard – Arctic)

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*Keywords:* Foraminifera, Grain size, Contouritic deposits, Bellsund Drift, Holocene.

The Arctic region represents a sensitive area to climatic variations. The Bellsund Drift is located in the Fram Strait area, between Greenland and Svalbard, and represents the only deep connection to the Arctic Ocean. In this strait occurs the interaction of two water masses, the warm Atlantic Water (AW) and the cold Arctic water (ArW). This interaction produces an important heat and mass exchange with the Arctic Ocean, influencing the climate in the entire Arctic region.

During the EUROFLEETS-2 Cruise PREPARED on board the R/V G.O. Sars, June 2014, a Calypso piston core GS191-01PC (1647 m water depth), was collected in the Bellsund Drift area. The core contains a high-resolution depositional sedimentary record of the last 20 kyr (Lucchi et al., 2014). For this work, we focused on the expanded Holocene sequence (more than 5 m-thick), defined using the age model constructed by Caricchi et al. (2019). Our study is based on the benthic and planktic foraminifera and grain size analysis.

The millennial record of the Bellsund Drift indicates a progressive increase of the water temperature, due to the incoming of the warm Atlantic water and the decreasing extension of sea-ice, which retreat by melting, producing cold superficial water masses facilitating the incoming of the AW into the entire water column. The IRD input during the end of the Upper Pleistocene indicates diffuse sea-ice and cold conditions. Higher productivity and warmer conditions characterised the Early Holocene. A shift from warm to colder conditions occurred during the Mid Holocene, affecting the ocean productivity. The Late Holocene showed the prevalence of surface cold-water conditions related to the sea ice melting, determined by increased AW heat inflow to the Arctic.

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