



Distribution patterns of foraminifera of Northwest Atlantic analyzed using metabarcoding and morphological approaches

Ines Barrenechea (1,2), Raphael Morard (3), Franck Lejzerowicz (2), Tristan Cordier (2), Stephan Mulitza (3), Michal Kucera (3), Daniel Ariztegui (1), and Jan Pawlowski (2)

(1) University of Geneva, Earth Sciences, Geneva, Switzerland (ines.barrenecheaangeles@unige.ch), (2) University of Geneva, Genetics and Evolution, Geneva, Switzerland, (3) MARUM Center for Marine Environmental Sciences, University of Bremen, Bremen, Germany

To assess relationship between metabarcoding and classical micropaleontological assemblages, ten multicores were collected around Newfoundland island, beside the confluence zone of two antagonistic currents the Labrador and Gulf Stream. This hydrographic setting makes it an interesting model to investigate the usefulness of metabarcoding in marine sedimentary records using DNA and foraminifera tests (> 63 μ m size fraction). Planktonic metabarcoding data and microfossil specimens of top cores samples reflect ocean currents pathways. Furthermore, in down cores the changes in composition can be related to past ocean current shifts due to climatic influence. Among the benthic species, those having a soft-shell are most abundant and diversified group. The metabarcoding data of hard-shell benthic foraminifera show a distribution in function of the bathymetry. Results of metabarcoding and micropaleontology can complement each other by displaying the presence of unfossilized and tiny foraminifera in sedimentary records and not only hard-shell foraminifera taxa.