

Organic matter of the Laptev Sea submarine cryolithozone

A.S. ULYANTSEV^{1*}, E.A. ROMANKEVICH^{1,2},
I.P. SEMILETOV^{2,3}, V.I. SERGIENKO⁴

¹ Shirshov Institute of Oceanology RAS, Moscow, Russia (*correspondence: uleg85@gmail.com)

² National Research Tomsk Polytechnic Univ., Tomsk, Russia

³ International Arctic Research Center, Fairbanks, USA

⁴ Institute of Chemistry FEB RAS, Vladivostok, Russia

Introduction

Recent East Siberian Arctic shelf is affected by rapid changes in different environmental parameters as geological, biogeochemical, geomorphological, and hydrological behavior [1-3]. Study of immobilized into permafrost organic carbon takes on special significance.

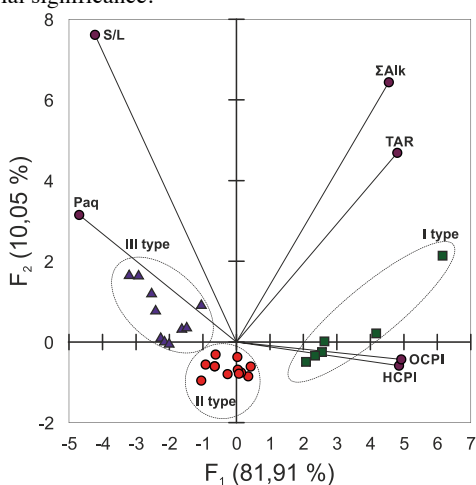


Figure 1. PCA biplot of obtained n-alkanes data.

Results and discussion

Based on molecular composition of n-alkanes from samples and principal component analysis three types of organic matter (OM) were identified (Fig. 1). Using a data set of multiple molecular organic proxies (n-alkanes, polycyclic aromatic hydrocarbons (PAHs), lignin and soil phenols) we compared organic geochemical compositions in the samples from the Laptev Sea submarine cryolithozone. Molecular compositions and contents of above mentioned OM classes in subsea thawed and frozen deposits from Buor-Khaya Bay were discovered.

[1] Shakhova *et al.* (2010) *Science* **327**, 1246–1250.

[2] Günther *et al.* (2013) *Biogeosciences* **10**, 4297–4318.

[3] Günther *et al.* (2015) *The Cryosphere* **9**, 151–178.