Geophysical Research Abstracts
Vol. 14, EGU2012-2270-1, 2012
EGU General Assembly 2012

Distribution of Methane in the Lena Delta and Buor Khaya Bay, Russia

I. Bussmann (1), K. Carstens (1), and B. Heim (2)

(1) Alfred-Wegener Institute, Shelf Sea Systems Ecology, Helgoland, Germany (ingeborg.bussmann@awi.de), (2) Alfred-Wegener Institute, Periglacial Research, Potsdam, Germany

The Lena River is one of the biggest Russian rivers draining into the Laptev Sea. Due to predicted increasing temperatures the permafrost areas surrounding the Lena will melt at increasing rates. With this melting high amounts of carbon, either organic or as methane will reach the waters of the Lena and the adjacent Laptev Sea. As methane is an important green house gas its further fate in the Lena Delta is of uttermost importance.
Methane concentrations and isotopic signal of methane in the waters of the Lena Delta and estuary were monitored from 2008 – 2010. Meltwater run-off and Permafrost soils are hot spots for methane input into the river water system. However, taking into account other environmental parameters (salinity, temperature) it seems that there is no simple distribution pattern, and the question whether methane is diluted with marine water or can be oxidized within the Lena Delta will be discussed.