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TITLE: Methane emissions from West Siberian mud volcanoes: observations near Khanty-Mansiysk

PRESENTATION TYPE: Poster Requested

CURRENT SECTION/FOCUS GROUP: Global Environmental Change (GC)

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ABSTRACT BODY: Recent studies have shown that mud volcanoes are important methane sources. We found mud volcanoes with high methane emissions in the floodplains of West Siberia middle taiga zone (25-40 km from Khanty-Mansiysk city). Despite of the minor area in comparison with surrounding methane-emitting wetlands, their methane emission rate reach 0.2 $kg \cdot m^2 h^{-1}$ that appears to be 1000 to 100000 times higher than that for wetlands. Probability density distribution of observed methane emission rates is close to log-normal. Methanotrophic communities oxidizing emitted methane were found around seepages. Molecular identification of bacteria community composition using *pmoA* gen detects both type II and type I of methanotrophic bacteria (*Gammaproteobacteria* and *Alphaproteobacteria* classes, respectively) with type I dominating. Microorganisms similar to the authentic psychrophile *Methylobacter psychrophiles* (previously detected only in tundra soils) also were found among the later as well as a number of unidentified methanotrophs belonging to unknown taxon.

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