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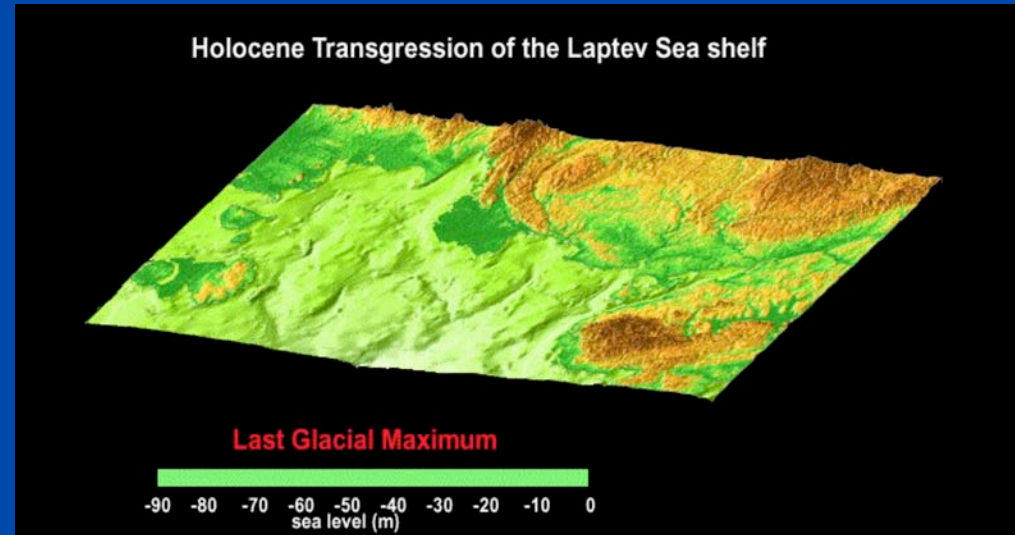
Alfred-Wegener-Institut
für Polar- und Meeresforschung
in der Helmholtz-Gemeinschaft

Process Studies on Permafrost Dynamics in the Laptev Sea



Research Objectives

- Microbial-driven processes in permafrost
- History of submarine permafrost
- Geochemical alteration of permafrost
- Stages of permafrost development
- High-resolution seismic characterisation of submarine permafrost
- Stability of submarine permafrost
- Temperature-fields in permafrost



Ice complex, Lena Delta, 2000



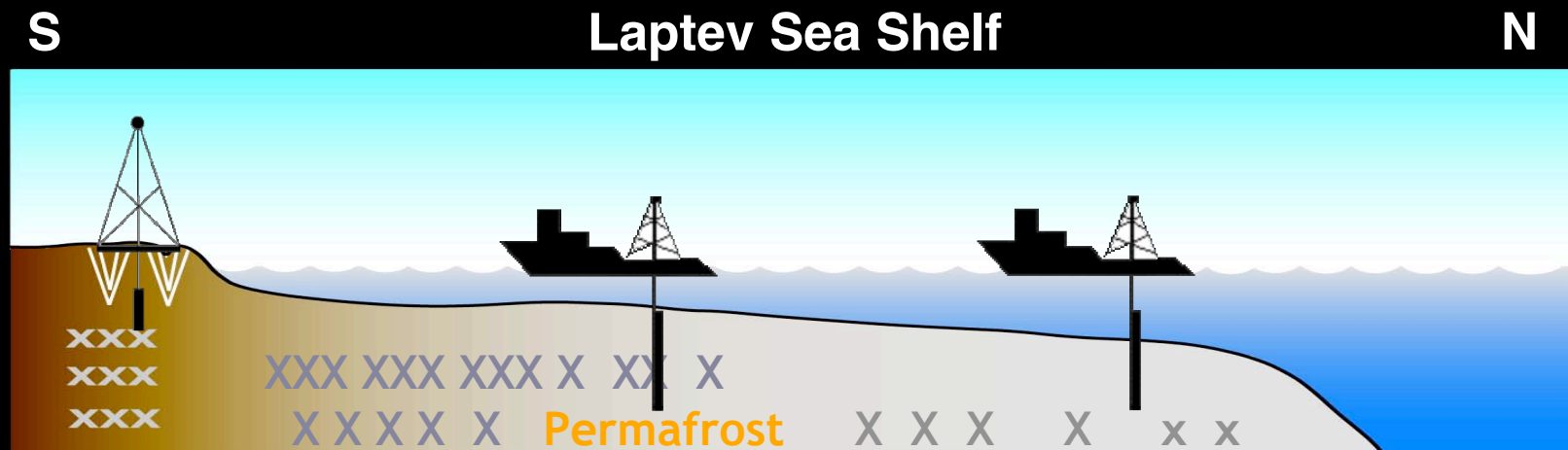
Laptev Sea flaw polynya, TRANS DRIFT VI, 1999



Process Studies on Permafrost Dynamics in the Laptev Sea Expeditions in 2004/2005



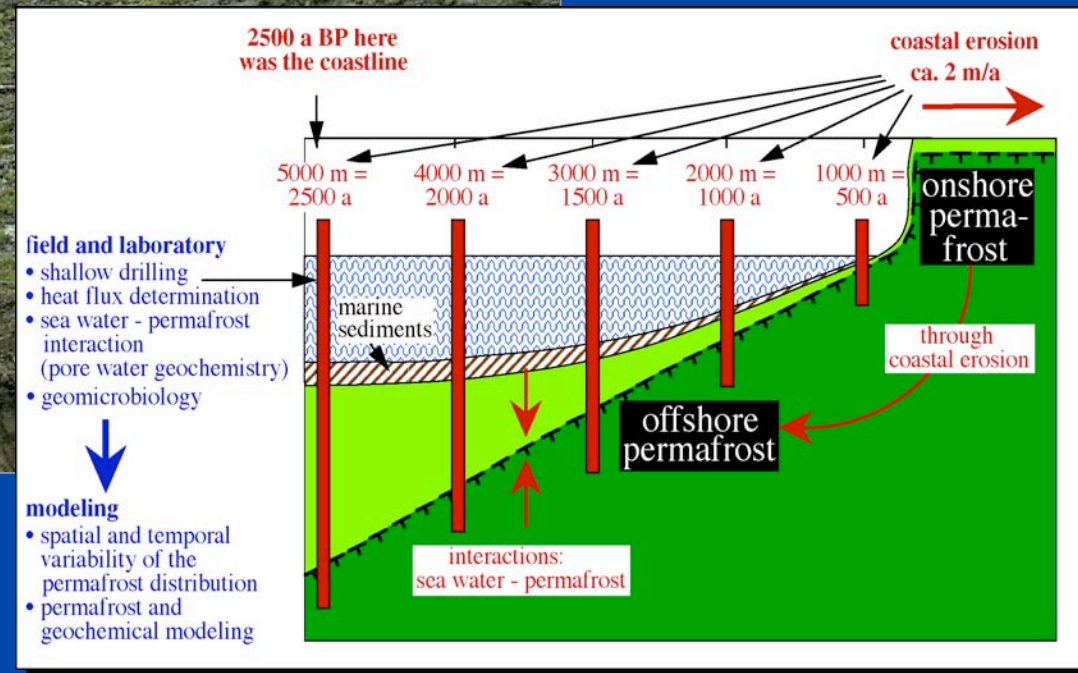
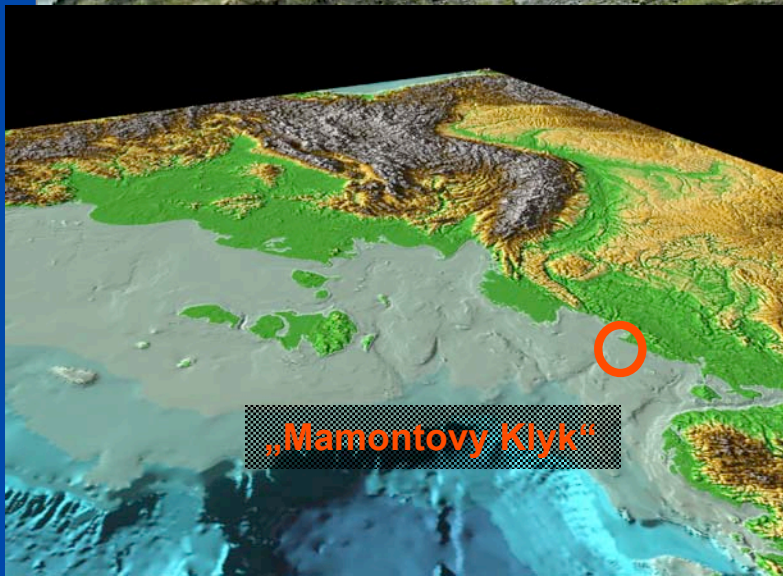
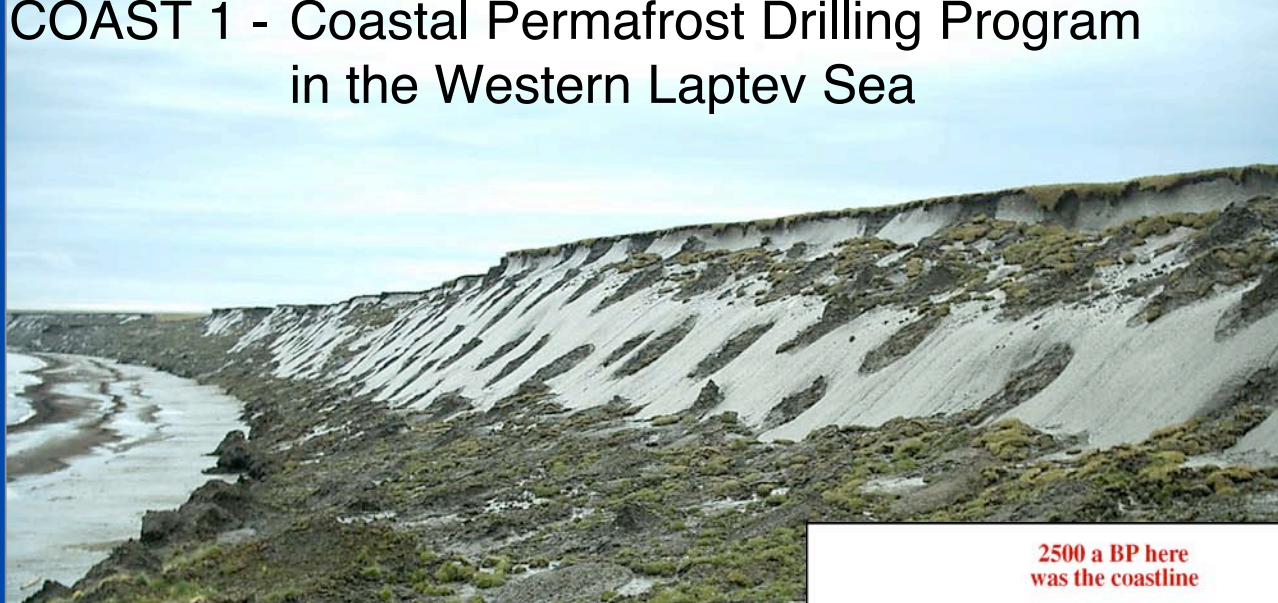
Dynamics and History of Permafrost



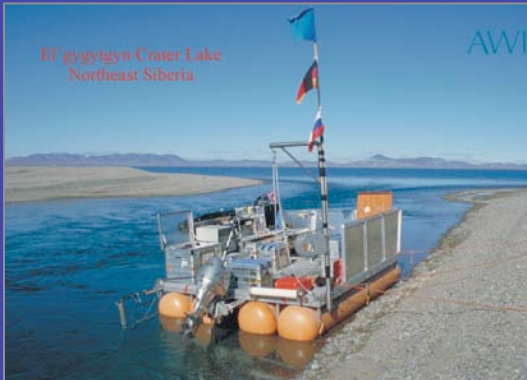
Process Studies on Permafrost Dynamics in the Laptev Sea Expeditions in 2004/2005



COAST 1 - Coastal Permafrost Drilling Program in the Western Laptev Sea

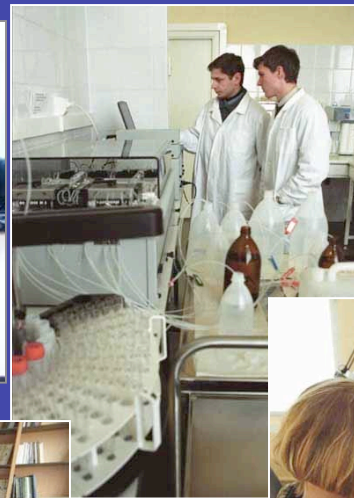


Otto Schmidt Laboratory for Polar and Marine Sciences

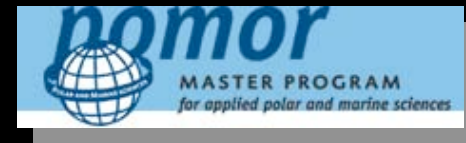


Goals

- to promote the progress of research and closer cooperation with scientists from Russia
- to initiate and coordinate international research projects
- to establish and develop a laboratory for polar and marine sciences (incl. a strict quality management)
- to support highly qualified Russian scientists in polar and marine science



Master Program for Applied Polar and Marine Sciences at the State University of St. Petersburg



Universität Bremen
und
Staatliche Universität St. Petersburg

Alfred-Wegener-Institut
und
Forschungszentrum GEOMAR

Kooperative Fakultät für
Angewandte Polar- und
Meereswissenschaften

Otto-Schmidt-Labor für Polar-
und Meeresforschung
St. Petersburg

Universitäten und For-
schungsinstitute in der
Russischen Föderation

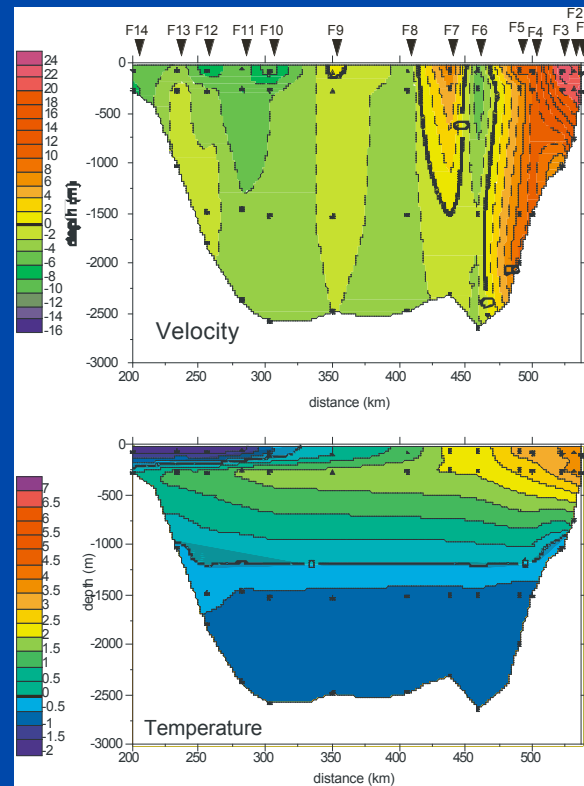
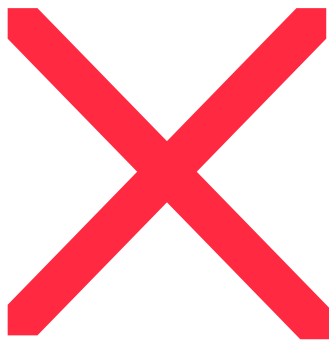
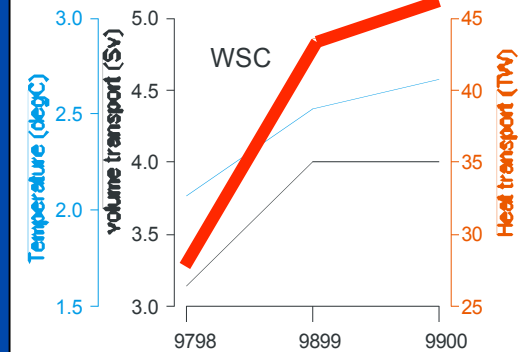
Verbund der
Norddeutschen
Universitäten

Russische und Deutsche
Partner des Otto-
Schmidt-Labors

Oceanic exchange of mass, heat and salt between North Atlantic and Arctic Ocean mooring array in Fram Strait since 1997 in EU FP5 programs VEINS and ASOF-N

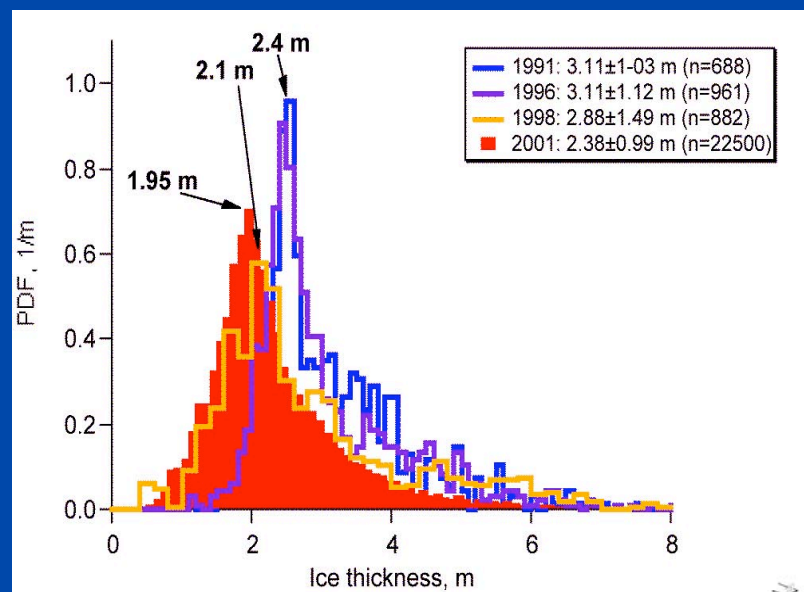
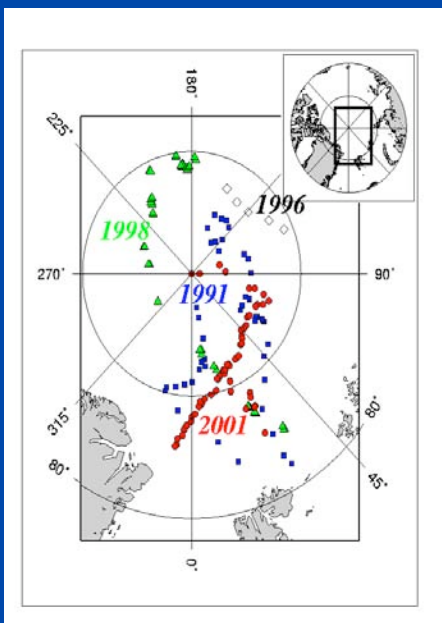
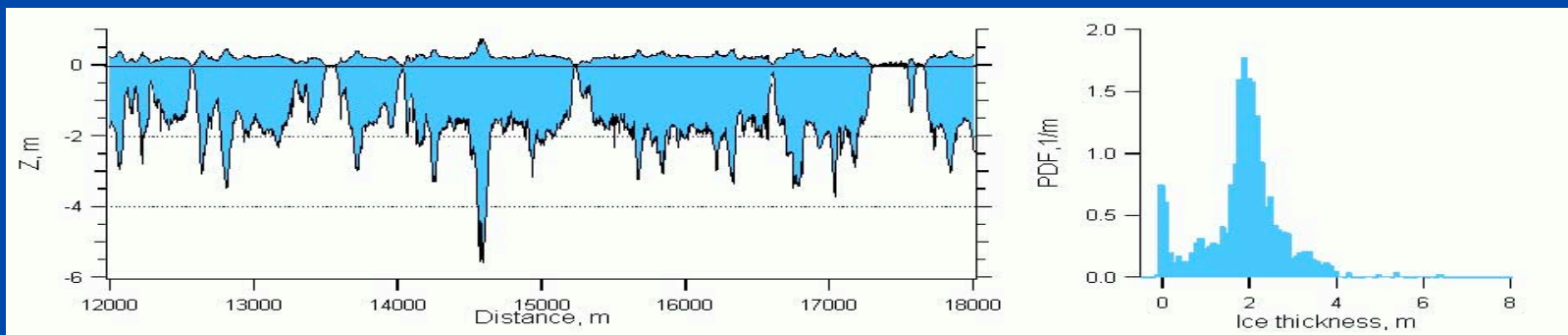


Increase of
northward
heatflow from
1997 to 2000

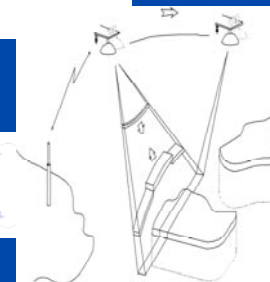


Velocity and
temperature
distribution in
winter 1998

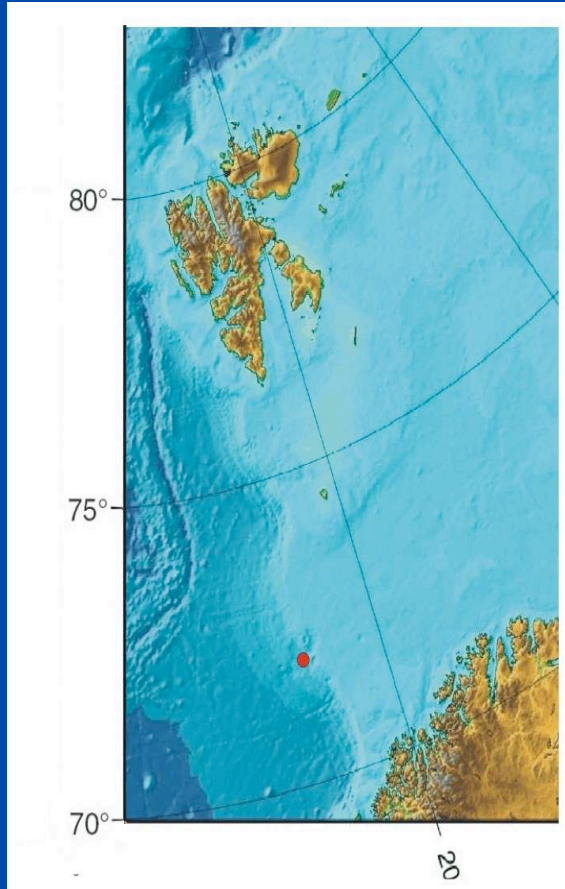
Arctic sea ice thickness variability retrieved from electromagnetic (EM) sounding



CryoSat



The ROV „Victor 6000“ onboard „Polarstern“ in 2003 investigating the Håkon Mosby Mud Volcano northwest of Norway at 1250 m water depth



„Victor 6000“

- depth rated for 6000 m
- 4.6 tons in air
- 2 manipulator arms
- 7 video cameras
- slurp gun
- water sampler
- multibeam sounder

Observation of methane release and sampling

