

The Lena Delta Research Consortium

Russian - German Arctic Research Collaboration
DFG Research Unit / Group

Possible Interests and Contributions

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Gas hydrates: Fans & Delta's



Unnithan

- Interested in numerical hydrate modelling
- Comparison of permafrost versus deep marine hydrates
- Different settings such as fans, delta's and margins / slopes.

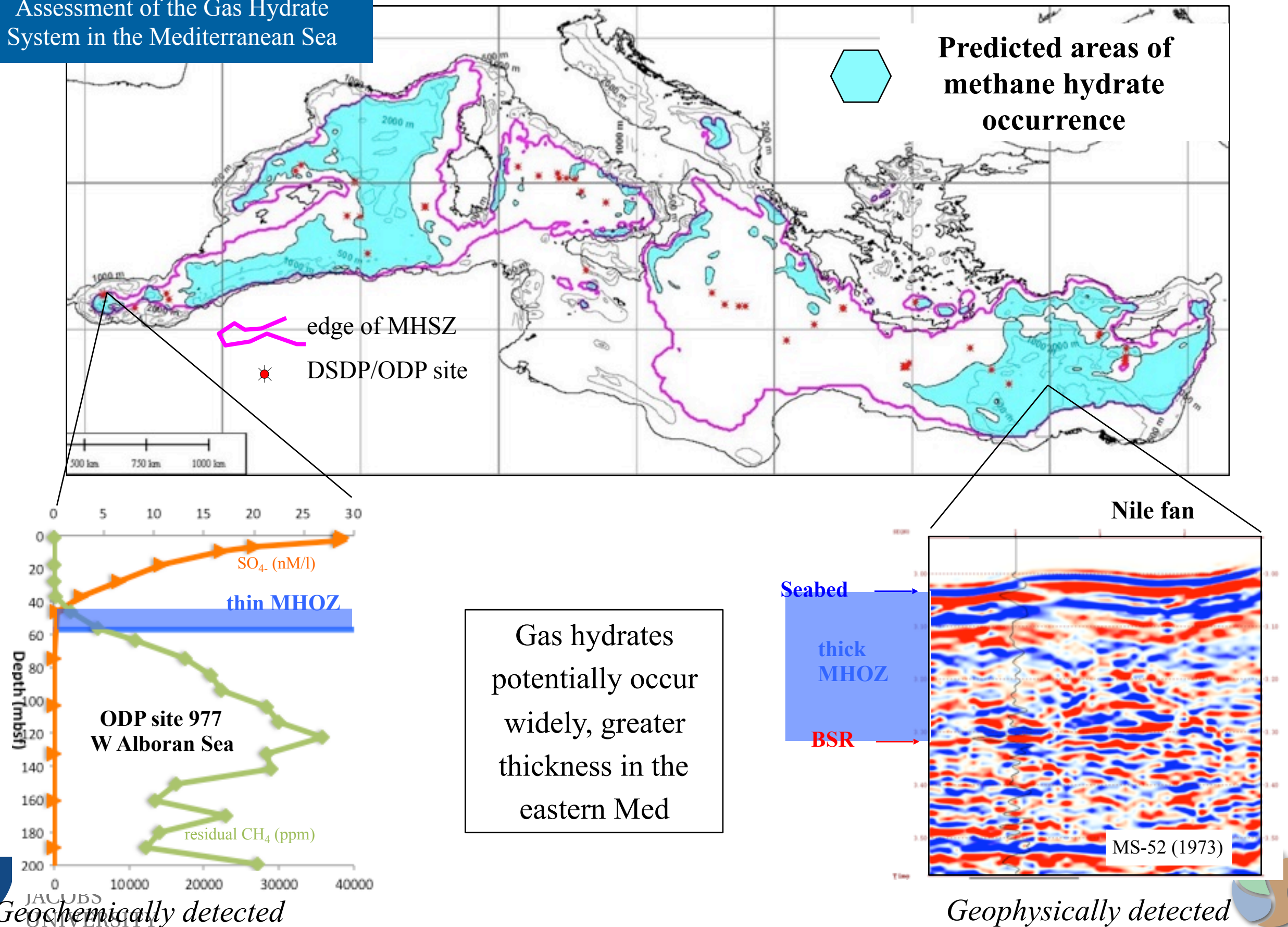


Daniel Praeg
(Marie Skłodowska-
Curie Research Fellow,
IPR-PUCRS (Brazil) &
Géoazur (France))



Methane hydrates predicted and detected

Assessment of the Gas Hydrate System in the Mediterranean Sea

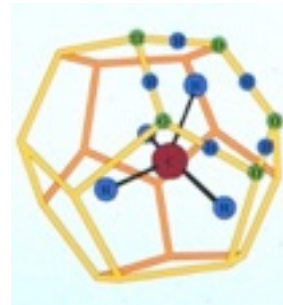


Reasons to be interested in submarine gas hydrates

Ice that burns - forms at low temperatures and/or high pressures, concentrating remarkable quantities of gas (mainly methane



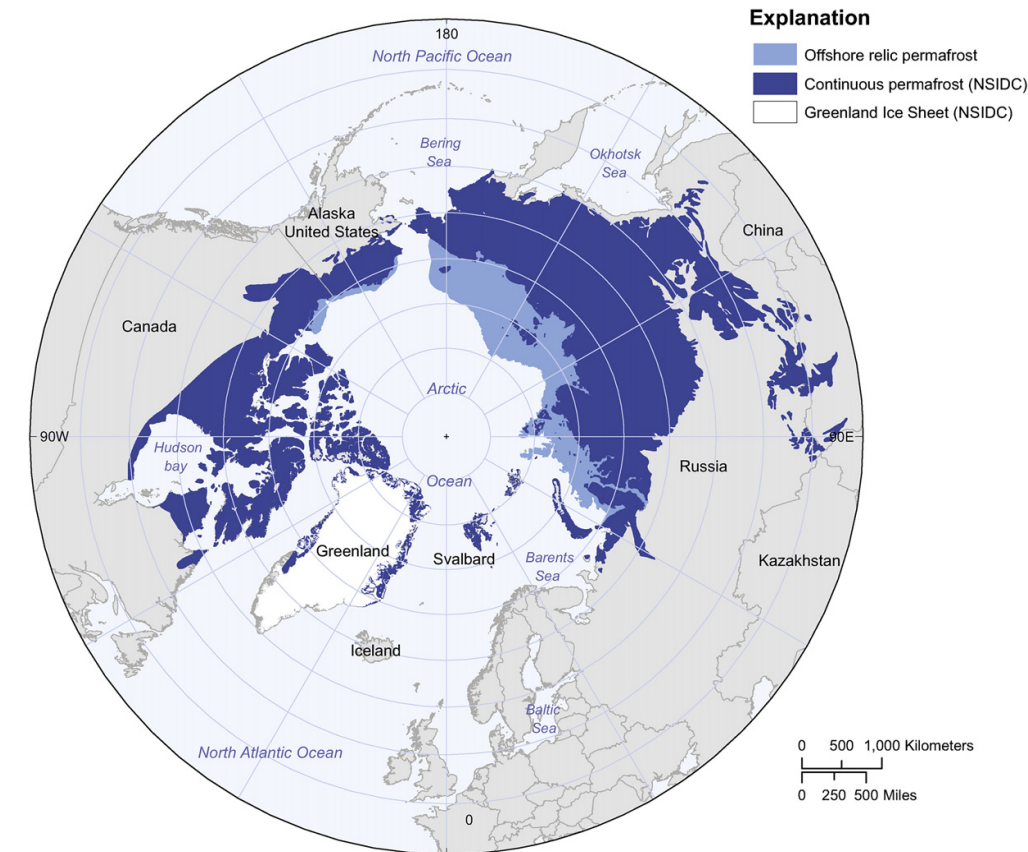
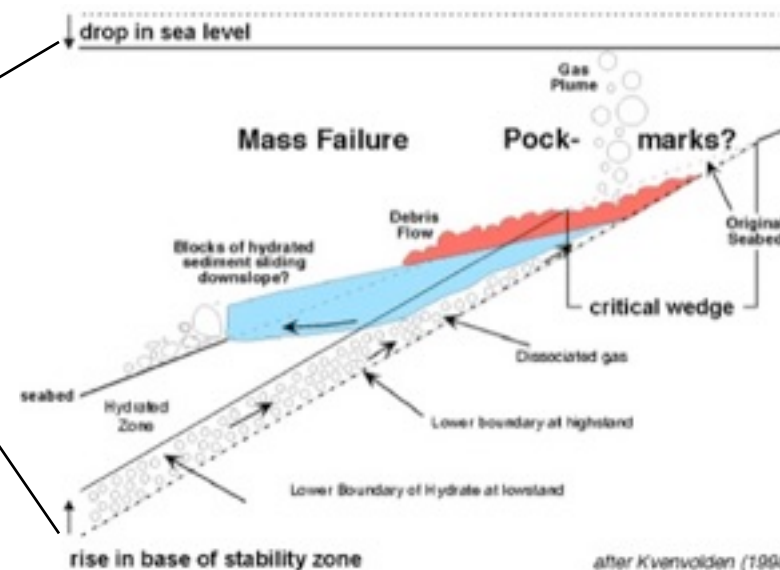
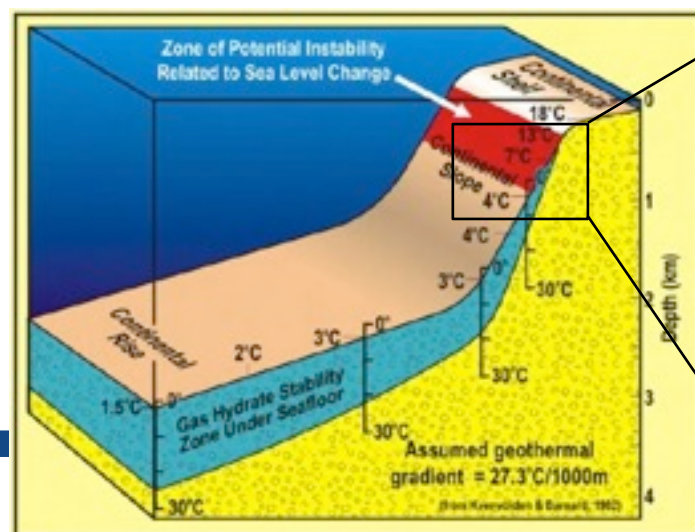
gas



*1 m³ solid
yields up to 160 m³
of gas*

water

- Estimated to be the largest HC reserve on Earth (mainly on continental margins >300 m depth)
- Stability sensitive to changes in pressure & temperature (sea level, bottom currents)
- Frozen global reservoirs of energy (for natural or anthropogenic changes)



T.S. Collett et al. / Marine and Petroleum Geology 28 (2011) 279–294

Where present, implications for:

- Global climate change, regional carbon budgets
- Geohazards (slope stability)
- Resource assessments (unconventional shallow gas, links to deeper hydrocarbons)
- Geosphere-biosphere coupling (extreme environments)



Thermokarsts & Planetary Analogues

- Comparative planetology & remote sensing
- Understanding thermokarst formation processes
- Correlation and comparison with other planetary bodies i.e. Mars
- Task + deliverables:
 - Image time series analysis, e.g. historical Landsat or anything else (made) available
 - Technological heritage of H2020 EarthServer-2 project
 - Better, improved topography, bathymetry based on satellite data for modellers

<http://earthserver.eu/>

