

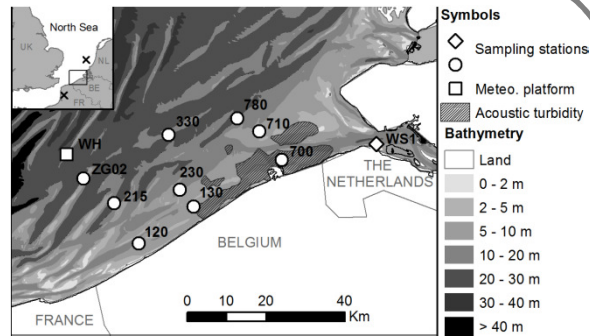
# Productivity and temperature as drivers of seasonal and spatial variations of dissolved methane in the Southern Bight of the North Sea

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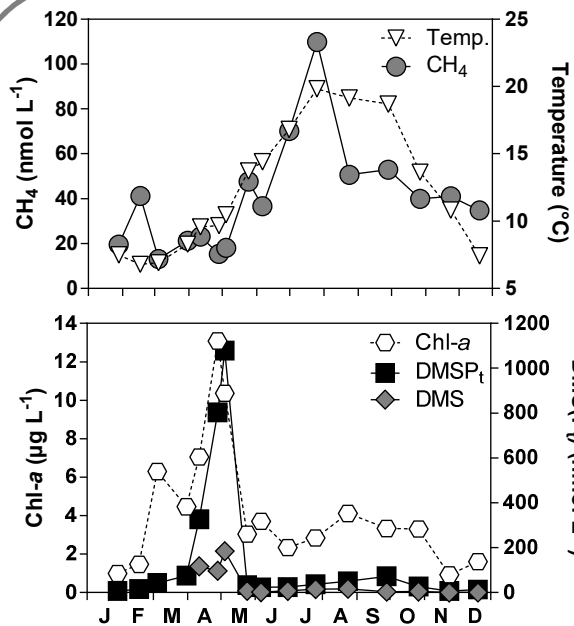
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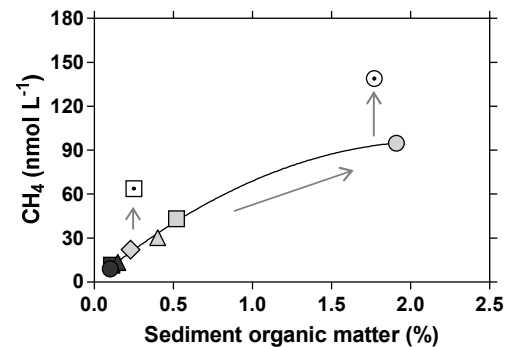
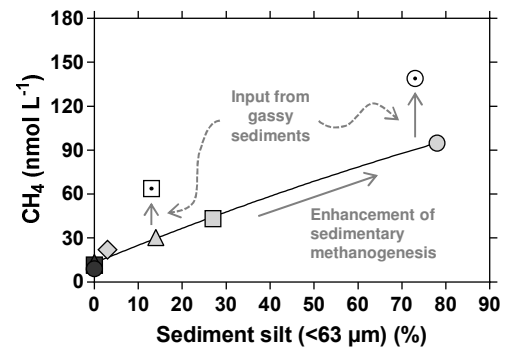
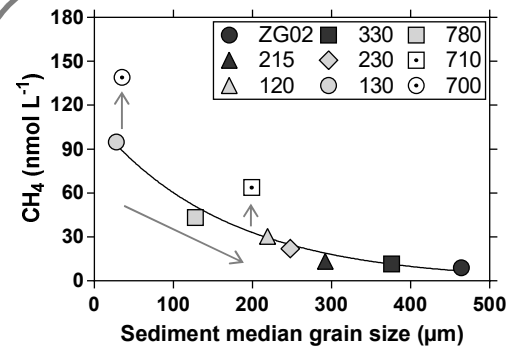
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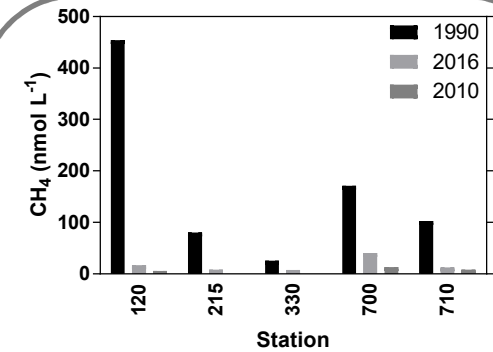
**1** Sampling in the Belgian Coastal Zone at nine fixed stations in 2016, 2017, 2018 and 2019 during 39 cruises; acoustic turbidity = gassy sediments



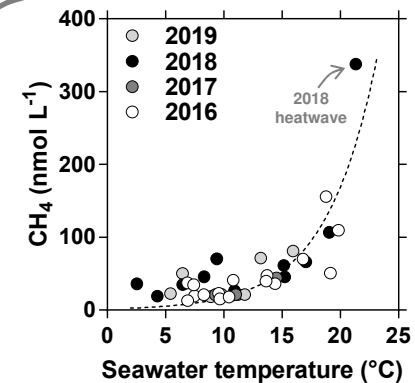
**2** Average dissolved CH<sub>4</sub> in surface waters was unrelated to DMSP and DMS but followed water temperature



**3** The relation between average dissolved CH<sub>4</sub> in surface waters and organic matter, silt content and median grain size of sediment shows that CH<sub>4</sub> comes from benthic methanogenesis



**4** The decrease of CH<sub>4</sub> between 1990 and 2016 is consistent with alleviation of eutrophication in the area



**5** The 2018 European heat wave lead to a massive increase of CH<sub>4</sub> in summer (July) compared to other years

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