Geophysical Research Abstracts
Vol. 21, EGU2019-15285, 2019
EGU General Assembly 2019

A snail's pace sonar survey unveils thousands of methane seeps in the Baltic Sea

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We present data describing an extensive ebullition event that occurred in Eckernförde Bay, a shallow gas-hosting area in the Baltic Sea, in the fall of 2014 and the succeeding years. A weak storm induced pressure fluctuations that in turn stimulated gas bubble release from the seabed. In a finely tuned, snail's pace sonar survey of the bay, we obtained a hydroacoustic dataset with exceptionally high sensitivity for bubble detection. This allowed us to identify 2591 bubble seeps rising within 28 h from the seafloor across the 90 km^2 study site. Based on our calculations, the estimated bubble-driven episodic methane flux from the seafloor across the bay is 1,900 μMol $m-2\,d^{-1}$. Our study demonstrates that storm-associated fluctuations of hydrostatic pressure induce bulk gas-driven ebullitions. Given the extensive occurrence of shallow-gas-hosting sediments in coastal seas, similar ebullition events probably take place on a global scale. However, these are likely to be missed during field investigations, due to the lack of high-quality data acquisition during storms, such that atmospheric inputs of marine-derived methane will be highly underestimated.