



## **FLUID ESCAPE STRUCTURES ON THE STOREGGA SLOPE: RESULTS FROM THE HYDRATECH CRUISE OF N/O LE SUROIT (JUNE–JULY 2002)**

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The study area stretches over the northern edge of the Storegga slides, from the axial region of the slides, in 2200 m water depth, to the upper slope, north of the slides, in 700 m water depth. High resolution seismic lines point to intense small-scale fracturing and diffuse degassing through the near seafloor sediments in the slides. In contrast, the slope area immediately north of the edge of the Storegga slides is nearly void of any seismic evidence pointing to seafloor degassing structures. Further upslope, fields of numerous gas chimney-type structures are observed starting at a distance of 10–20 km from the slides, in water depth of less than 1 km. High-resolution images obtained with a 2–5 kHz chirp profiler illustrate various types of these structures. Chimneys that are observed as distinct features at the seafloor may merge into a single larger chimney at depth, and inversely. Not all of the chimneys are observed to reach the seafloor. When they do, the chimneys are often associated with seafloor depressions or pockmarks. Bathymetry and acoustic seafloor imagery data show that these pockmarks can be up to 500 m large in diameter, and are usually associated with a higher seabed reflectivity. They are shallow, rarely exceeding a few meters in depth. Pull-downs are commonly observed in and below the chimneys, which suggests the presence of gas. In several cases, surrounding reflectors are bent upwards near the chimneys, which may result from sediment deformation or an increase in velocity in the surrounding sediments. Most of the chimney-like structures are rooted below the bottom simulating reflector (BSR).