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A geomorphological investigation of lateral spreading and translational sliding within the Storegga Slide.

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Lateral spreading and translational sliding are two of the most prevalent types of slope failures within the Storegga Slide. This has been concluded from a thorough analysis of three acoustic data sets from the Storegga Slide complex – high-resolution multi-beam bathymetry, TOBI sidescan sonar imagery and 3D seismic data. We have applied quantitative geomorphometric techniques to the bathymetry data set and analysed the texture of sidescan sonar images using Grey-Level Occurrence Matrices (GLCMs). Both techniques have been shown to improve the geological interpretation of submarine environments (e.g. Micallef *et al.*, 2006), and allowed an objective characterisation of the slide surface to be carried out. These results were then combined with the interpretation of the seismic data set and all the geological information currently available for Storegga in the literature. In this way we were able to define the types and boundaries of the different styles of mass movements, and represent them on a geomorphological map. Further insight is provided into the origin and the mode of failure of lateral spreading and translational sliding. Finally we attempt to describe the characteristic morphology of lateral spreading and demonstrate that it is a very common slope failure process in the Norwegian margin.

Micallef, A., Berndt, C., Masson, D.G. and Stow, D.A.V. (2006) *A quantitative technique for the morphological characterisation of submarine slides*, EGU06-A-00352.