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Results from 3D structural modelling of the Norwegian Margin

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The Norwegian continental margin is a passive volcanic margin that experienced a long pre-break up rifting history. Permian, Triassic and Jurassic rifting episodes were followed by the major pre-break up rifting reported for the Late Jurassic-Early Cretaceous. The latter initiated the formation of the deep Vøring and Møre Basins with more than 8 km of Cretaceous sediments. Final continental break up took place in the Late Paleocene - Earliest Eocene around 55 Ma b.p. and culminated in the formation of oceanic crust. Post-breakup subsidence led to deposition of thick clastic deposits. Through time rifting and subsequent basin subsidence appear to have progressed from east to west. The present structural setting is segmented into a Permian-Jurassic province of basins on the Trøndelag Platform close to the present west coast of Norway, followed westward by the deep Cretaceous basins which in turn are limited to the west by the Vøring and Møre Marginal Highs. The latter are covered by Paleocene and Eocene basalt flows and by Cenozoic (Neogene) deposits. Extensive petroleum exploration and a large number of seismic experiments from both industry and academia provided a wealth of subsurface information in the area during the last two decades and gave way to new insights and to a number of questions. We present results obtained in the frame of the EUROCORES project EUROMARGINS16. The main goal was to combine information on the geometry and properties of the sedimentary part of the system with data on the geometry and physical properties of the deeper crust and to integrate both the continental and the oceanic parts of the margin into a consistent 3D structural model. This 3D model of the Vøring-Møre Margin images the structural geometry of the major basins and of the crystalline crust in the continental part of the margin as well as in the oceanic part. Besides the fact, that the model

offers a base for a refined regional structural analysis it can as well as be used for backstripping and subsidence analysis. We discuss the respectively deduced tectonic implications on the evolution of the margin.