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Reconstruction of the burial history in the central part of the Thuringian Syncline with reflectance measurements on vitrinite at Kupferschiefer samples

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Abstract

Reflectance of bituminite and resulting data of organic maturity were measured at Kupferschiefer samples of the Thuringian Syncline and the Mansfeld Syncline. They are in the order of 0,7 to 1,0% VRr and indicate a deeper burial of this region than assumed before. Values of the vitrinite reflectance from the western Thuringian forest and the area northwest exceed even 1.2 to 1.4% VRr. The intensity distribution shows a differentiated pattern with high reflectance east of the Harz mountains and in the northwestern prolongation of the Thuringian Forest, in opposite to relatively low values in eastern Thuringia. Besides the high rank of coalification in the surroundings of the basement uplifts which were exhumed during Cretaceous these data reflect also the contour of the late Permian to Triassic Thuringian subbasin. Probably the coalification pattern thus shows the decreasing thickness of late Permian and Triassic deposits and the position of Jurassic to early Cretaceous grabens which were inverted during late Cretaceous inversion. Nevertheless to date, decision whether the high rank of Kupferschiefer deposits was caused by overlying Jurassic to early Cretaceous deposits or an additional cover of late Cretaceous sediments, which was shed during the uplift of Harz mountains and the Thuringian Forest, is impossible.