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Facies and geothermal reservoir characteristics of sedimentary rocks: an outcrop analogue study of the Meso- and Cenozoic series of Budapest (Hungary)

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Sedimentary basins located in regions exhibiting geothermal anomalies are very promising for hydrothermal exploration. Facies model integration into seismic 3D interpretation allow description of reservoir parameters such as permeability, thermal conductivity and reservoir heat flow, as these properties are directly correlative to facies heterogeneity integrated from outcrop studies.
Outcrop analogue studies support the characterization of deep geothermal reservoirs and their geothermal operations. Our data from the Meso- and Cenozoic sedimentary series of Budapest include carbonates and clastic sediments of Triassic, Eocene, and Oligo-Miocene age as well as Pleistocene travertine, exposed on the western side of the river Danube. Field and laboratory analyses reveal distinct horizons of different geothermal potential and thus, enable us to identify and interpret corresponding exploration target horizons in geothermal prone depths of the Pannonian Basin.