



Thermofacies: key to geothermal reservoir characterization

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The use of deep geothermal systems is based on a detailed knowledge of their distinct reservoir characteristics. In the early stages of hydrothermal reservoir exploration, characterization of the reservoir is mainly accomplished by evaluation of drilling data and in some cases seismic surveys. However, for reservoir prognosis, the main geothermal parameters such as (1) permeability, (2) thermal conductivity, and (3) reservoir heat flow have to be quantified. Outcrop analogue studies enable the determination and correlation of the necessary parameters, and based on detailed facies analysis, the geothermal exploration concept becomes more precise and descriptive. Finally, the detection of the spatio-temporal development of sedimentary facies within a specific exploration area may contribute to establish integrated structural 3D reservoir models. Thus, thermofacies – the facies dependence of geothermal parameters – become a key feature for reservoir prognosis, reservoir stimulation, and efficient reservoir utilisation.