

General Theme 6

6.5

Often dedicated to volcanic regions, geothermal power generation is now being developed in non-magmatic areas, particularly in sedimentary basins. These contexts commonly enclose territories with large population and where geothermal energy production can be a valuable local energy source. Several uses of the geothermal energy from sedimentary basins exist including, individual and industrial heat production from ground heat exchangers or direct-used aquifer and electricity production from deep hot aquifers in sedimentary rocks, or in the underlying fractured basement. The development of geothermal energy in these contexts is a challenge for many countries, where the geothermal resources are underdeveloped. The most advanced understanding of sedimentary basin formation, including its basement, as well as present-day fluid circulation and heat sources are required to achieve such development.

New exploration methods have to be envisioned for deep geothermal resources, including the influence of sedimentary heterogeneities and fracture network both in the sedimentary cover and the crystalline basement. The assessment of the performance of geothermal systems in sedimentary basins is also of interest to help bring green energy to large population.

The present session focused is on both deep and shallow geothermal resources, exploration and exploitation, in sedimentary basins and its crystalline basement. The aim is to bring together varied scientific work covering both the fundamental and applied aspects. The session thus welcomes work spanning from subsurface (geology, geophysics, and geochemistry) to heat exchanger technology and reservoir modelling.