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Thermo2Pro: A tool for deep geothermal exploration in basin context

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Abstract:

It is well known that a better understanding of the geology and petrophysical properties is necessary to develop deep geothermal projects. However, this knowledge must be shared within the professional community to be efficient. Thermo2Pro is essentially a Web tool designed to fill the gap between the information derived from R&D projects and the authorities of the geothermal sector who need to use it.

Thermo2Pro is a joint project lead by ADEME and BRGM – the French Environment and Energy Management Agency, and the French Geological Survey –. It is dedicated to professionals dealing with the deep geothermal exploration in basin context. A user committee, gathering contracting authorities, local authorities, and design offices, has been involved in the development of the project since its very beginning. Thermo2Pro has two main objectives: to give relevant material to prepare a pre-feasibility study, and to promote geothermal development by facilitating access to the information.

The main vector for Thermo2Pro is a Web application where the user accesses the information by simulating vertical or horizontal sections and boreholes. Requests are defined via an interactive cartographic interface running WPS Web services (Web Processing Service, OGC – Open Geospatial Consortium). Data are kept in 3D grids allowing a management of the information in a standard way; staying independent from the tools that have generated this information. The 3D grids are stored in a VTK format (Visualization Tool Kit).

The functionalities of Thermo2Pro will be demonstrated through data related to the Trias aquifer of the Paris basin. This reservoir could be a complement to the Dogger that has been exploited since the 80's in the area. The available information for the Trias will be mainly a model of geometry, an estimation of porosity, and a model of temperatures. Those parameters have been acquired and inferred in the scope of the CLASTIQ-2 R&D project (ADEME and BRGM).