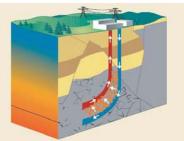








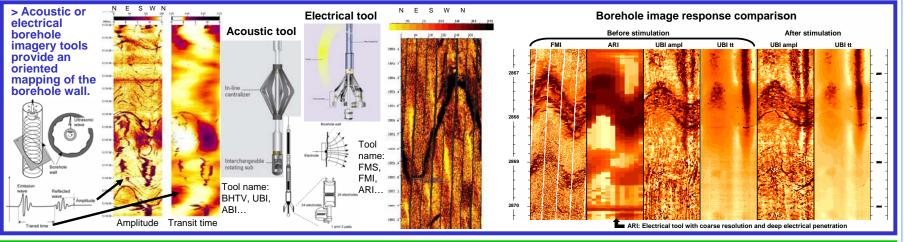
Borehole imagery contribution to EGS reservoir exploration

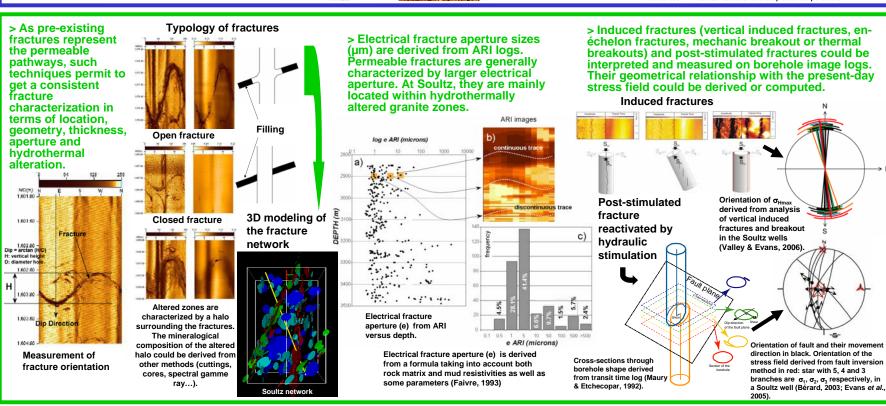


> Despite of the high resolution

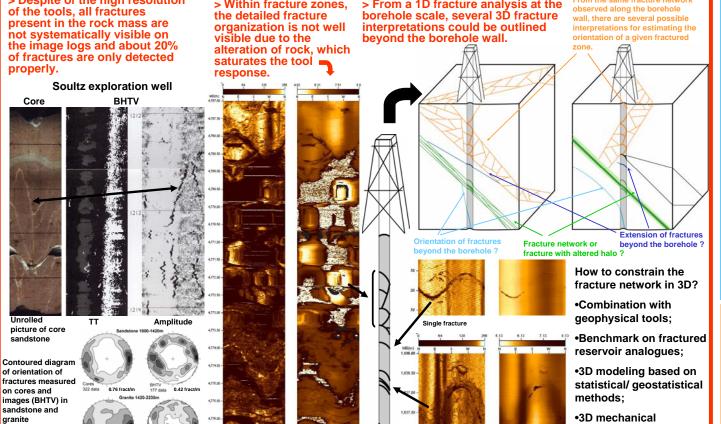
The reconnaissance by drilling of Enhanced Geothermal Systems (EGS) developed within fractured reservoirs, needs to run borehole imagery techniques. At European scale, past and on-going EGS projects run borehole imagery techniques and cores for estimating the fracture network. This contribution about borehole imagery in EGS reservoir exploration is based on the exhaustive database collected in the deep Soultz-sous-Forêts (France) wells.







> From a 1D fracture analysis at the



> Within fracture zones,

Authors

Dezayes Chrystel¹, Genter Albert¹, Valley Benoît², Sausse Judith³

¹BRGM Geo-energy (Fr), ²ETH Zürich (CH), ³University of Nancy (Fr)

ENGINE Workshop "Defining, exploring, imaging and assessing reservoirs for potential hea exchange", GFZ Potsdam (Germany), 6-7 November 2006

Our references

Dezaves et al. (1996). Bull. Centre Rech. Explor -Prod. Elf. Aquitaine. 20. 1. p. 197-212. Dezayes et al. (1996), Bull. Centre Rech. Explor.-Prod. Elf Aquitaine, 20, 1, p.197-212. Dezayes et al. (2004), GRC Transaction, Vol. 28, p. 213-218. Dezayes et al. (2005), World Geothermal Congress - Antalya - Turquie - 24-29 April 2005. Genter et al. (1997), J. Geoph. Res., V. 102, B7, p.15419-15431. Sausse & Genter (2005), London Geological Society, Special Publication, 240, 1-14. Valley & Evans (2006), Soultz Scientific Meeting, June 2006.

modeling of fracture

system.

Conclusions

- ➤ As coring sampling is very exceptional in EGS projects, borehole imageries constitute the **unique** tool to measure the in-situ fracture geometry.
- These methods permit to obtain high quality fracture datasets and stress estimation of a geothermal EGS reservoir and contribute to a better understanding of the fluid circulation.
- ➤ Borehole image logs are routinely used in EGS projects, although there are some issues: fracture detection, 3D extension, lithology characterization.

Major needs

- Combination with other geophysical measurements (well logging, seismic...) for a better characterization of the geothermal reservoir.
- Better understanding of fracture organization based on naturally fractured outcrops and mechanical modeling of fracture network.

