

Note from the Hubbert Quorum

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Since 1993 the “Hubbert Quorum” has met annually on the day prior to the Fall Meeting of the American Geophysical Union (AGU) in San Francisco. The purpose of this one-day meeting at the USGS-Menlo Park facility is to bring together hydrogeologists and geoscientists who are interested in geologic processes associated with crustal fluids. Frequently these researchers work on topics that have application to fields outside of hydrology such as fault mechanics, volcanology, and economic geology (see <http://www.camnl.wr.usgs.gov/hydrotherm/Hubbert.htm>).

The Hubbert Quorum was originally inspired by the success of the Gilbert Club, which has met annually since 1983 on the day after the AGU Fall Meeting (see <http://socrates.berkeley.edu/~geomorph/gilbert.htm>). The Gilbert Club, which takes place at the University of California-Berkeley, was conceived as an opportunity for the geomorphology community to hear major talks, debate new ideas, and encourage community-level discussion of issues. It is named after the great geoscientist Grove Karl Gilbert (Bourgeois, 1998). Similarly, the Hubbert Quorum invokes the name of the eminent geophysicist Marion King Hubbert, who contributed immensely to the understanding of the role of fluids in geologic processes (*e.g.*, Hubbert, 1940, 1953; Hubbert and Willis, 1957; Hubbert and Rubey, 1959) and also had an abiding interest in the significance of Earth resources in human affairs (*e.g.*, Hubbert, 1949, 1956, 1967).

Like the Gilbert Club, the Hubbert Quorum has no formal affiliation with any organization and has always been an open meeting, advertised through email. The intent is to enable an informal group of natural-process-oriented scientists to freely exchange ideas on an annual basis. Presentations are made on a voluntary basis and all participants are invited to present their work.

The Quorum is an all-day affair beginning at 11:00 AM and adjourning at 6:00 PM. The meeting begins with an “icebreaker” brunch and is followed by several extended (20 min), and short (10 min) presentations. The goal is to avoid the hectic pace of typical meetings by providing ample time for open discussion and questions during and following each presentation. All speakers are encouraged to initiate discussion by presenting work in progress, rather than a canned talk.

The past few decades have seen substantial growth of interest in the role of fluids in geologic processes. Hydro-

geologists and other geoscientists are actively exploring the role of groundwater and other subsurface fluids in such fundamental geologic processes as crustal heat transfer, ore deposition, hydrocarbon migration, earthquakes, tectonic deformation, diagenesis, and metamorphism. The growing interest in such problems is indicated by the popularity of regularly scheduled meetings on “Water-Rock Interaction” and “Geofluids,” by Penrose Conferences such as “Continental Magmatic-Hydrothermal Systems” (2004), and by an increasing number of related symposia at annual meetings of organizations such as AGU.

In keeping with this community-wide trend, the 15th Hubbert Quorum on December 9, 2007, was the largest ever, attracting 55 participants who represented a wide range of topical expertise and diverse institutions and countries. The first two speakers were from ETH-Zurich and presented complementary talks that described progress in modeling multiphase, multicomponent, higher-temperature (transcritical point) hydrothermal flow. Thomas Driesner described some of the associated computational challenges in his talk titled *The not-so-trivial side of combining the thermodynamics and flow of H₂O-NaCl fluids*. Philipp Weiss presented an initial application of the ETH-based community hydrothermal model in his talk, *Numerical modeling of porphyry-type ore-deposit systems*. Another highlight was Sébastien Boutareaud’s (Université J. Fourier) talk on *Clay-clast aggregates: New textural evidence for seismic fault sliding?*, in which he described the results of rock-friction experiments that entail rates and temperatures similar to those associated with real earthquakes. In a talk on *Stress memory in the Koyana-Warna region, India*, Pradeep Talwani (University of South Carolina) summarized his recent *Journal of Geophysical Research* paper on “seismogenic permeability” (Talwani *et al.*, 2007) and also introduced a fascinating data set from India that links episodes of seismicity to very small (+20 cm) water-level excursions. And, as is customary, the Hubbert Quorum concluded with a longer, more philosophical talk. This year, Bob Bodnar presented *From the clouds to the core: The whole-earth geohydrologic cycle*, based on work with his colleagues and students at Virginia Tech. Relative to the standard hydrologic cycle, the “geohydrologic cycle” includes additional reservoirs and fluxes, and links the “exosphere” and “geosphere” through subduction and volcanism (plate tectonics).

The full program and list of attendees for the 2007 Hubbert Quorum (and other Quorums from 1999 on) can be viewed at <http://wwwrcamnl.wr.usgs.gov/hydrotherm/Hubbert.htm>. We hope Hubbert Quorum will continue to enable scientists studying fluids and geologic processes to freely exchange ideas on an annual basis.

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