27th Hubbert Quorum - December 8, 2019

11:00    Brunch

12:30    Bekins, Ingebritsen & Hurwitz – Welcome

12:40    Craig Manning (UCLA) – Fluids of the lower crust and upper mantle: Deep is different

1:10     Barbara Sherwood Lollar (U. Toronto) – Exploration of the deep hydrogeosphere in crystalline rocks: Implications for resources and for life

1:40     Alexander Gysi (Colorado School of Mines) – Hydrothermal partitioning of rare earth elements (REE): from fluids to ore deposits

2:00    Posters:
1. Priyanka Bose (Virginia Tech) – Quantifying heat flow in Yellowstone's magma-hydrothermal system
2. Steve Breen (UC Berkeley) – Shaking water out of sands: An experimental study
3. Anran Cheng (Oxford U.) – Quantifying helium flux from the crystalline basement and determining the processes controlling its transport in the Williston Basin
4. Dakota Churchill (UC Berkeley/USGS) – The chemistry and mineralogy of sinter deposits from two large geysers in the Upper Geyser Basin, Yellowstone National Park
5. Yi Fang (U. Texas) – Petrophysical properties of hydrate reservoir at Green Canyon block 955 (GC 955) in the northern Gulf of Mexico
6. Grant Ferguson (U. Saskatchewan) – Emplacement and preservation mechanisms for the world’s oldest groundwaters and associated life
7. Stephanie Flude (Oxford U.) – Deep crustal source for hydrogen and helium gases in the São Francisco Basin, Minas Gerais, Brazil
8. Alexander Gysi (Colorado School of Mines) – Rare earth element (REE) metasomatism in iron-oxide-apatite mineral deposits: Stability of hydrothermal monazite and xenotime
9. Rob Harris (Oregon State U.) – Assessing the thermal regime of the Stevenson Island Vent Field, Yellowstone Lake, Yellowstone National Park, Wyoming
10. Jörg Hasenclever (U. Hamburg) – Brine formation and mobilization in submarine hydrothermal systems
11. Peter Kang (U. Minnesota) – Roughness, inertia, and diffusion effects on anomalous transport and reaction in rough fractures
12. Rūta Karolytė (Oxford U.) – Using noble gases to trace the migration of hydrocarbons into shallow aquifers: Separating signal from noise with inverse modelling techniques
13. Jiaqi Liu (U. Tokyo) – Dimensionless number analysis of variable-density flow and subsurface contaminant transport based on numerical simulations
14. Mileva Radonjic (Oklahoma State U.) – Shale-fluid interactions
15. Lars Rüpke (GEOMAR) – Progress in transport-reaction coupling in hydrothermal system modeling
16. Jacek Seibek (McGill U.) – Permeability, porosity, and hydrothermal alteration within a fault zone at 600m depth in metapelitic gneiss, below the Athabasca Basin, Canada
17. Oliver Warr (U. Toronto) – Subsurface He, Ar, and H2 production

2:30    Break

3:00    Barbara Kleine (U. Iceland) – Hydrogen isotope and water contents of the Icelandic crust: Implications for the hydration of the oceanic crust and the subducted water flux

3:20    Marina Rosas-Carabajal (IPGP) – Hydrothermal system of La Soufrière de Guadeloupe Volcano (West Indies, France)

3:40    Ruby Fu (UC Berkeley) – Instabilities and phase transitions in subsurface multiphase flow
4:00 **Juan Pablo Daza (Stanford)** – Simulating diagenesis: Using level set methods to compute temporal pore structure and physical property changes due to dissolution/precipitation under stress and reactive fluid flow

4:20 **Break**

5:00 **Rob Sohn (WHOI)** – Signal from noise: Exploiting natural processes to understand subsurface flow

5:30 **Andy Fisher (UCSC)** – Some recent advances and future prospects in studies of subseafloor hydrothermal processes

6:00 **Adjourn and dinner at a local restaurant**