



ICDP Workshop Multi-Well Deep Underground Laboratory in the Songliao Basin

Conventional underground laboratories using existing mines and tunnels have made important contributions to practical geoscientific applications and theoretical research. However, an untapped resource of rich geological, geophysical and hydrological data exists in deep sedimentary basins. For many years records have been collected from oil and gas exploration, which provide a unique opportunity to build a deep underground laboratory using existing boreholes. A deep underground laboratory using a spatially separated, but interconnected network of boreholes has great potential to address fundamental scientific issues about energy resources and environmental conditions.

A program has been proposed to discuss the possibility of establishing a deep multi-well (1000 - 6000 m) underground laboratory (MW-DUL) using a large number of existing boreholes in the Songliao Basin, Northeastern China. The objectives of this laboratory are 1) detection and exploration of the deep biosphere; 2) geological CO₂ sequestration; 3) seismic and volcanic activity monitoring; 4) sharing well-characterized samples containing possible abiotic methane or other hydrocarbons that can be analyzed in multiple laboratories; 5) sharing data on samples containing abiotic hydrocarbons; and 6) developing new international scientific collaborations. Because an extensive infrastructure exists within and around the Songliao Basin, this basin is an ideal site in which to create such a laboratory. The goal is that this laboratory would become operational in the next 3-5 years. The planning workshop will be held in Beijing, China, from June 27 to 30, 2015.

We invite researchers from the international scientific community with experience and interest in underground laboratories worldwide (including but not limited to geology, geophysics, geohazards, geomicrobiology, hydrology, borehole instrumentation, and drilling techniques) to participate in the workshop. We especially welcome the involvement of young scientists and graduate students. ICDP will support travel and expenses for approximately 20 foreign participants. Interested scientists and engineers are requested to send a brief application describing their experience and interests to Yongjian Huang (599029271@qq.com) before April 1, 2015. The steering committee composed of Chengshan Wang, China University of Geosciences, Beijing; Hailiang Dong, Miami University; Steve Graham, Stanford University; Xueyu Lin, Jilin University; Shuwen Dong, Chinese Academy of Geological Sciences; Axel Liebscher, GFZ German Research Centre for Geosciences; Tullis C. Onstott, Princeton University; and Heyong Wu, Institute of Exploration & Development of Daqing Oilfield will notify selected participants in mid-April, 2015.