

**AAPG Annual Meeting
March 10-13, 2002
Houston, Texas**

Phan Trung Dien¹ (1) Vietnam Petroleum Institute, Hanoi, Vietnam

Forming Effective Porosity in Granitoid Basement Reservoir of the Cuulong Basin

Oil fields in fractured basement of the Cuulong basin are wellknown in the Southeast Asia. Porosity of these basement reservoir may be caused by various processes such as tectonic activities, weathering, hydrothermal and crystallization. The porosity of fractures and cavities caused by weathering and tectonic activities only exists when the granitoid rocks were being outcropped in the open air. But most of these fractures and cavities are filled with sedimentary materials when the granitoid block was subsided in underwater bottom and contacts with the depositional environment to become a basement of the sedimentary basin. Granitoid rocks consist of deep-underground crystallised plutonics with stabilised Si-Al composition, therefore porosity caused by hydrothermal and crystallised processes is no-significance. Based on characteristics and evolution of basement highs and sedimentation, it is shown that the porosity of the basement reservoir is a relationship of many factors between the basement and sedimentary sequences. This special combination consists of the volumetric shrinkage due to the diagenesis of the Paleogene wedge-like sedimentary sequences distributed in grabens under reverse-fault slopes; granitoid rocks on the hanging branch of the thrust fault making the basement vulnerable to partial collapse; the continuous piling up of sedimentary sequences from the beginning of Miocene to present which has increased continuously the load on the top of the basement massif. The collapse has led to the formation of a series of fractures with different shape and size. This is the most effective porosity type of the basement reservoirs in Cuulong basin. This study can assist in discovering and evaluating the porosity and orient the prospecting in crystalline basement of other basins.