

General Theme 6

6.3

Approximately 50% of hydrocarbon reservoirs around the world are composed of carbonates in which over 50% consist of dolomite rocks. Dolomite reservoirs generally bear a higher porosity and permeability relative to limestone counterparts in similar burial conditions. Mechanisms of dolomitization have become one of the core issues of the “dolomite problem” which has drawn persistent attention from many geologists for more than a century. Although numerous models of dolomitization have been presented, controversies remain. With increasing exploration to more deeply buried carbonate reservoirs, opportunities to penetrate dolomite successions increase significantly. Well-preserved, large-scale vuggy/cavernous porosity has been even identified in dolomite reservoirs at burial depths more than 8000 m. These findings challenge the traditional thought of rapid porosity decline with increasing burial. In this case, additional dissolution and preservation of porosity in burial conditions could have also played an important role in reservoir formation/preservation. Integrated research with multiple approaches (petrography, geochemistry, basin tectonics and fluid transport and reactive modeling and so on) has led to new insights and a better understanding of dolomitization, burial dissolution of carbonates and preservation of porosity, particularly in the deeply buried dolomite rocks. This session will provide a platform to present new advances on mechanisms of dolomitization, and development and preservation of dolomite reservoirs.