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摘要:

盖层封闭条件是南海相碳酸盐岩沉积区寻找油气的关键,本文通过黔中隆起及周缘地区泥岩和灰岩盖层的水岩相互作用实验研究,模拟了泥岩、灰岩盖层在地表雨水、盐水和在不同温度下岩石的主要离子的溶解特征和质量损失特征。通过实验认为水岩相互作用对盖层的保存与破坏至关重要。不同水介质和不同流动状态下,盖层岩石在水介质中的溶解度和离子含量变化特征和幅度不同,泥岩与灰岩特征不同。表现在:天然雨水下,泥岩盖层阴、阳离子浓度均降低,并随时间趋于稳定,灰岩与泥岩略有差别;盐水环境下,盖层阴、阳离子溶解均受到抑制,浓度变化复杂,并随时间趋于稳定,灰岩与泥岩略有差别,温度升高溶解特征复杂化。下古生界在加里东运动暴露期间,黔中隆起及周缘盖层化学损失量巨大。

关键词: [盖层](#) [水岩相互作用](#) [黔中隆起](#)

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Abstract:

The enclosed condition of caprocks is one of the key factors in exploring hydrocarbon source in the sedimentary carbonate beds in South China. The paper summarizes our recent work in water-rock interaction of caprocks around the upheaval in the middle of Yunnan province. The experiment simulated dissolution and mass loss of main ions of clay and carbonates caprocks in rain water and brine under different temperatures. By measuring major ions and mass loss, it was found that the water-rock interaction is very important in caprock preservation and breakage. The solubility and content of ions in caprocks varies in various waters and flow states, with clear dissimilarity between clay and carbonate rocks. In rain water, the concentration of both cation and anion in mud rock decreased until tranquilization, and the trend are different between mud and carbonate rocks. In a brine environment, the dissolution is restrained with the complex transformation of ion concentration, and becomes stable with time, and there is a little different between the two kinds of rocks. And the changes become complicated with higher temperature. The loss amount of caprocks was huge because of the exposure and chemical erosion during the Caledonian tectonic movements around the upheaval in the middle of Yunnan province.

Keywords: [caprocks](#) [water-rock interaction](#) [upheaval in middle of Yunnan province](#)

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