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海相碳酸盐岩优质烃源岩发育的主要影响因素

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摘要：

我国近3×106km2的海相碳酸盐岩分布区长期被认为是潜在的油气勘探区,近年来虽然我国在海相碳酸盐岩地层的油气勘探有了一些突破,但与广泛分布的海相碳酸盐岩区相比,取得的成果还不令人满意。其关键问题是海相碳酸盐岩沉积盆地优质烃源岩发育相带不明,控制优质烃源岩发育的主要因素不清。本文根据海洋生物、现代海洋沉积和古代海相地层中有机质含量分布特征和实验室模拟实验结果,提出影响海相沉积有机质富集的主要因素有:沉积物形成时水体中生物生产率、沉积速率、沉积阶段及早期成岩作用阶段的氧化还原环境、海底深部流体作用等。其中,水体中高生物生产率是海相环境形成富有机质沉积的关键因素,沉积阶段和早期成岩作用阶段水体的相对还原环境有利于有机质富集保存,海底深部流体的活动是形成富集有机质沉积的不可忽视的因素。沉积速率是影响海相沉积有机质富集的主要因素,适当的沉积速率是海相沉积富集的有利条件。

关键词：碳酸盐岩 烃源岩 海相沉积 沉积环境

Main Factors Influencing Marine Carbonate Source Rock Formation

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Abstract:

Distribution area of marine carbonate sediment in our country amount to about 3 million square kilometers and it has been considered as the potential petroleum exploration area all the time. But till today the exploration activity has not got a satisfied result, and the key problem come into contact with is that the facies of quality source rocks is not clear in carbonate sedimentary basin, and the main factors controlling formation of the quality source rocks is not clear either. The paper studied the ocean organism, organic matter distribution characteristics in contemporary marine sediments and ancient marine strata and laboratory modeling. It shows that the main factors influencing the marine organic matter accumulation are organism production index in waters when sediment formation, depositional rates, oxidation-reduction potential of environment when depositing and early diagenesis stage, hot fluids activity in ocean bottom and so on. Among the above factors, organism production index in waters when sediment formation is the key factor, and reducing environment when depositing and early diagenesis stage is favorable condition for organic matter accumulation and preservation, hot fluids activity in ocean bottom is the factor cannot be ignored, depositional rates is the main factor and suitable depositional rates is favorable condition for marine carbonate organic matter accumulation.

Keywords:carbonate source rock marine sediment sedimentary environment

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