

中扬子台地下奥陶统含礁层系层序地层研究

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摘要: 运用露头层序地层学原理与方法, 将中扬子台地早奥陶世含礁地层划分为4个II型层序, 并阐述了各层序的体系域特征和形成的沉积动力学机制以及海平面变化对沉积、生物迁移、生物礁及环境的控制作用。认为在含礁层序形成过程中, 存在着4个海平面变化旋回, 第一旋回为两河口期早至中期, 第二旋回为两河口期晚期至道保湾期早期, 第三旋回为道保湾期早至晚期, 第四旋回为大湾期早至中期, 其中两河口期存在着3个次一级的旋回, 第一旋回发生于分乡组二段(鲕粒段); 第二旋回发生于分乡组三段(互层段); 第三旋回发生于分乡组四段(夹层段); 识别出3个平衡型碳酸盐体系和一个滞后型碳酸盐岩沉积体系。研究表明, 分乡组与红花园组生物礁均形成于高海平面时期。由于海平面变化过程中存在多个次一级的旋回, 致使本区生物礁具有厚度和规模小、数量多和分布广等特点。

关键词: 层序地层; 海平面变化; 体系域; 生物礁; 中扬子地区; 奥陶纪

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Sequence stratigraphy of Lower Ordovician reef-bearing strata in the Middle Yangtze platform

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Abstract: The Lower Ordovician reef-bearing strata in the middle Yangtze platform may be divided into four II-type depositional sequences based on the principle and method of outcrop sequence stratigraphy. According to the characteristics of the systems tracts and depositional dynamic mechanism of these sequences and the controlling effects of sea level changes on the sedimentation, organism migration, bioreefs and environment, it is held that there occurred four sea level change cycles during the formation of the reef-bearing sequences in the study area: the first one occurred from the early to middle Lianghekouan age, the second one from the late Lianghekouan age to early Daobaowanian age, the third one from the early to late Daobaowanian age, and the last one from the early to middle Dawanian age. In the second cycle three subcycles are distinguished: the first subcycle occurred in the Second Member (Oolite Member) of the Fenxiang Formation, the second one in the Third Member (Alternation Member) of the Fenxiang Formation, and the third one in the Fourth Member (Intercalation Member) of the Fenxiang Formation. Three keep-up carbonate systems and one lag carbonate depositional system are recognized. The reefs of the Fenxiang and Honghuayuan Formations formed in the highstand phase. Because of the occurrence of multiple subcycles in the process of sea level change, the reefs in the study area are characterized by the small thickness, small scale, large number and wide distribution.

Key words: sequence stratigraphy; sea-level changes; systems tract; organic reef; Ordovician; middle Yangtze area