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大型内陆拗陷湖盆层序结构充填特征及其分布规律——以鄂尔多斯盆地延长组为例

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摘要:

近年来层序地层学的发展为我们进行盆地分析提供了新思路,应用沉积学和高分辨率层序地层研究方法,将盆地晚三叠世延长组划分出4个长期、22个中期基准面旋回。整个盆地在延长期的“沉积-层序-构造”演化史表现为:LSC1构造初始沉降、湖泊形成;LSC2湖盆快速拗陷,晚期湖泊进入鼎盛期;进入LSC3,盆地周缘构造趋于稳定、盆地开始填平补齐期,湖泊开始充填淤浅;LSC4期河流沉积作用增强,盆地进入超补偿沉积阶段,湖泊被淤塞并进入残余湖泊沉积期。提出并定义了层序结构动力学概念,认为层序结构动力学是在研究层序充填过程中由于构造运动、海平面变化、物源供给、气候、沉积作用等因素控制影响层序结构发育特征及其分布规律的一门学科。在对鄂尔多斯盆地延长组层序地层综合划分基础上,根据一个基准面变化周期中所形成的层序结构变化特征,将层序结构划分出5种基本层序结构单元类型,即A型、B1型、B2型、B3型和C型等5种。针对鄂尔多斯盆地延长组不同地理位置、不同沉积体系单元具体分析了层序充填结构特征、结构类型、层序充填动力学过程,层序结构发育类型及充填过程,探讨了大型内陆拗陷湖盆层序结构动力学特征。首次提出了“层序结构分布律”,建立了鄂尔多斯盆地延长组大型内陆拗陷湖盆层序结构分布模式,认为在没有重大构造事件、突发沉积事件发生的情况下,只有那些相邻的层序结构类型才能相互重叠地分布。

英文摘要:

The development of sequence stratigraphy in recent years provides new approach for us to perform basin analysis. We divided the Yanchang Formation of Late Triassic in Ordos basin into 4 long-term and 22 medium-term base level cycles using sedimentology and high-resolution sequence stratigraphy methods. In Yanchang Stage, the deposit-sequence-structure evolution of Ordos basin can be summarized as the following: the structure subsided initially in LSC1 and lakes were formed; the lake basins downwarped quickly in LSC2 and was most active in the late period; in LSC3 the circumjacent structures tended to be stable, with basin filling commenced and the lakes became shallow; in LSC4 fluvial deposition increased, and the basin turned into extra-compensation stage, with the lakes silted and turned into residual lacustrine deposit. This paper also put forward and defined the concept of sequence structure dynamics, which is considered as a subject that researches on the control and effect of tectonic movement, sea level fluctuation, source supply, climate and sedimentation on sequence structure development and its distribution laws during sequence filling process. Based on the comprehensive division of the Yanchang Formation sequence stratigraphy, the sequence structure was classified into 5 types (A, B1, B2, B3 and C) according to the sequence structure variation features formed in a datum variation cycle. Then we detailedly analyzed the sequence filling structure features, structure types, sequence filling dynamics process, developing types of sequence structure and filling process with respect of various locations and deposit system units of the Yanchang Formation, Ordos basin, and discussed the sequence structure dynamics characteristics of large continental depressed lake basins. Then we brought forward the "sequence structure distribution laws" for the first time, and constructed the sequence structure distribution pattern of large continental depressed lake basins of Yangchang formation, Ordos basin. It was considered that without important structural event or paroxysmal deposit event, only the type of adjacent sequence structures may distributed with superimposition.

关键词: [鄂尔多斯盆地](#) [大型内陆拗陷湖盆](#) [延长组](#) [可容纳空间](#) [层序结构动力学](#) [层序结构分布律](#)

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