沉积速率与烃源岩有机质丰度关系——以二连盆地为例

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Relationship between Sedimentation Rate and Organic Matter Abundance of Source Rocks:A Case Study of Erlian Basin

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摘要/Abstract

摘要：

沉积速率与烃源岩有机质丰度的关系研究主要集中于海相沉积中，一般认为是正相关关系或负相关关系。利用二连盆地61口探井的取心资料，研究了湖相沉积中沉积速率与烃源岩有机质丰度的关系。沉积速率低于5cm/ka时沉积环境的氧化还原程度影响着沉积速率与烃源岩有机质丰度的关系，氧化环境中沉积速率与有机质丰度为明显的正相关关系，随着沉积速率的增高有机质丰度明显增大;还原环境中沉积速率与有机质丰度相关性差，沉积速率对烃源岩有机质丰度影响较小，随着沉积速率的增高有机质丰度没有明显变化趋势。沉积速率高于5cm/ka时古生产力影响着沉积速率与烃源岩有机质丰度的关系，古生产力低的湖盆中沉积速率与有机质丰度为明显的负相关关系，随着沉积速率的增高有机质丰度明显减小;古生产力大的湖盆中沉积速率与有机质丰度相关性差，沉积速率的变化对烃源岩有机质丰度影响较小，随着沉积速率的增高有机质丰度没有明显变化趋势。

关键词: 沉积速率, 有机质丰度, 烃源岩, 二连盆地

Abstract:

Relationship between sedimentation rate and organic matter abundance of source rocks has been studied mainly in marine sediments,which is generally thought to be positive or negative correlation.Based on the data sets of sediment intervals from 61 exploration wells in the lacustrine Erlian Basin,the relationship in ancient lacustrine sediments has been studied.It has been found out that the relationship between sedimentation rate and organic matter abundance of source rocks is controlled by the redox conditions when sedimentation rate is lower than 5cm/ka,while when sedimentation rate is higher than 5cm/ka,the relationship is controlled by the paleo-productivity.When sedimentation rate is lower than 5cm/ka,the relationship is positively correlated under the oxidation conditions,while in reduction conditions,there is no significant relationship between sedimentation rate and organic matter abundance.When sedimentation rate is higher than 5 cm/ka,the relationship is controlled by the paleo-productivity.The relationship is negatively correlated in low palaeo-productivity environment while there is no significant relationship between sedimentation rate and organic matter abundance in high paleo-productivity environment.

Key words: Sedimentation rate, Organic matter abundance, Source rocks, Erlian Basin

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