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藻类勃发—湖相油源岩形成的一种重要机制

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摘要：

浮游藻类是重要的湖相生油母质，本文以渤海湾盆地济阳坳陷早第三纪湖相生油岩为例，研究了其中藻类（主要是颗石藻和沟鞭藻__化石的分布特征，并通过与现代水体中藻类生产和沉积作用的比较，探讨了生油湖泊中藻类生产和沉积方式及其对油源岩形成所起的控制作用，结果显示，藻类勃发现象在早第三纪生油湖泊中相当普遍，而且贯穿于各类油源岩的形成过程，这类快速事件性沉积是湖相油源岩形成的一种重要机制。

关键词：浮游藻类 勃发现象 湖相油源岩 湖相生油母质 形成机制 沉积

Algal Blooms : the Primary Mechanism in the Formationof Lacustrine PetroleumSource Rocks

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Abstract:

Phytoplanktons are important oil-producing materials in lake basins. As a case study, lacustrine petroleum source rocks in the Jiyang depression of the Bohai Bay basin are studied. They are mainly distributed in the Shahejie Formation (Eocene-Oligocene) and can be divided into three types; calcareous laminated shales, calcareous laminated mudstones and organic-rich laminated shales. Optical, SEM and BSEI analyses of these source rocks reveal that there are algal (coccoliths and dinoflagellates) laminae in the rocks. An individual algal lamina is generally composed of one species, such as Reticulofenestra bohaiensis in coccolith laminae, and Fromea as well as Bohaidina in dinoflagellate laminae. This suggests that algal laminae be formed from algal blooms in the ancient lake. Other components of source rocks included organic matter laminae, carbonate laminae and clay-rich laminae. Besides, it is suggested in the paper that the sedimentation of organic matter laminae and carbonate laminae be also closely related to algal blooms. We thus conclude that the laminated lacustrine source rocks in the Jiyang depression were formed from algal blooms, which is the primary mechanism in the formation of lacustrine petroleum source rocks.

Keywords:algal blooms phytoplankton lacustrine petroleum source rocks mechanism

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