<<层序地层学原理>>

图书基本信息

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前言

为了及时学习国外油气勘探开发新理论、新技术和新工艺，推动中国石油上游业务技术进步，本着先进、实用、有效的原则，勘探与生产分公司和石油工业出版社组织多方力量，对国外著名出版社和知名学者最新出版的、代表最先进理论和技术水平的著作进行了引进，并翻译和出版。

从2001年起，在跟踪国外油气勘探、开发最新理论新技术发展和最新出版动态基础上，从生产需求出发，通过优中选优已经翻译出版了五期28本专著。

在这套系列丛书中，有些代表了某一专业的最先进理论和技术水平，有些非常具有实用性，也是生产中所亟需。

这些译著发行后，得到了企业和科研院校广大生产管理、科技人员的欢迎，并在实用中发挥了重要作用，达到了促进生产、更新知识、提高业务水平的目的。

该套系列丛书也获得了我国出版界的认可。

2002年丛书第2辑整体获得了中国出版工作者协会颁发的“引进版科技类优秀图书奖”，2006年丛书第4辑的《井喷与井控手册》再次获得了中国出版工作者协会的“引进版科技类优秀图书奖”，产生了很好的社会效益。

今年在前五期出版的基础上，经过多次调研、筛选，又推选出了国外最新出版的6本专著，即《螺杆泵与井下螺杆钻具》、《气井排水采气》、《钻井和修井作业实用公式与计算手册（第二版）》、《未来能源》、《油藏工程手册》、《层序地层学原理》，以飨读者。

其中《油藏工程手册》、《层序地层学原理》以原版影印版的方式引进出版，以满足广大读者希望能够看到原汁原味的外文书的期望，这也顺应了国内石油行业广大员工外语水平普遍提高的趋势。

在本套丛书的引进、翻译和出版过程中，勘探与生产分公司和石油工业出版社组织了一批著名专家、教授和有丰富实践经验的工程技术人员担任翻译和审校人员，使得该套丛书能以较高的质量和效率翻译出版，并和广大读者见面。

希望该套丛书在相关企业、科研单位、院校的生产和科研中发挥应有的作用。

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内容概要

本书在回顾层序地层学发展历史的基础上，叙述了层序地层学的分析方法，介绍了岸线迁移和层序界面，主要研究了体系域及其特征，论述了层序地层学模式，并讨论了地层界面的时间属性问题。

本书可供从事地质、地球物理勘探的科技工作者及油藏工程师使用，也可作为大专院校相关专业的教学参考书。

书籍目录

章节摘录

method for analyzing seismic-reflection data stimu-lated a revolution in stratigraphy, with an impact onthe geological community as important as the intro-duction of the flow regime concept in the late 1950s——early 1960s and the plate tectonics theory in the 1960s（Miall, 1995）. The concepts of seismic stratigraphywere published together with a global sea-level cyclechart （Vail et al., 1977）, based on the underlyingassumption that eustasy is the main driving forcebehind sequence formation at all levels of stratigraphiccyclicity. Seismic stratigraphy and the global cyclechart were thus introduced to the geological commu-nity as a seemingly inseparable package of new strati-graphic methodology. These ideas were then passed onto sequence stratigraphy in its early years, as seismicstratigraphy evolved into sequence stratigraphy withthe incorporation of outcrop and well data（Posamentier et al., 1988; Posamentier and Vail, 1988;Van Wagoner et al., 1990）. Subsequent pubhcations（e.g., Hunt and Tucker, 1992; Posamentier and James,1993; Posamentier and Allen, 1999） shift the focusaway from eustasy and towards a blend of eustasy andtectonics, termed relative sea level. Nonetheless, theglobal-eustasy model as initially proposed （Vail et al.,1977） posed two challenges to the practitioners ofconventional stratigraphy: that sequence stratigraphy,as linked to the global cycle chart, constitutes a superiorstandard of geological time to that assembled fromconventional chronostratigraphic evidence, and thatstratigraphic processes are dominated by the effects ofeustasy to the exclusion of other allogenic mechanisms,including tectonisrn （Miall and Miall, 2001）. Althoughthe global cycle chart is now under intense scrutiny andcriticism （e.g., Miall, 1992）, the global-eustasy model isstill used for sequence stratigraphic analysis in somerecent publications （e.g., de Graciansky et al., 1998）. In parallel to the eustasy-driven sequence stratigra-phy which held by far the largest share of the market,other researchers went to the opposite end of the spec-trum by suggesting a methodology that favored tecton-ism as the main driver of stratigraphic cyclicity. Thisversion of sequence stratigraphy was introduced astectonostratigraphy （e.g., Winter, 1984）. The majorweakness of both schools of thought is that a prioriinterpretation of the main allogenic control on accom-modation was automatically attached to any sequencedelineation, which gave the impression that sequencestratigraphy is more of an interpretation artifact thanan empirical, data-based method. This a priori interpre-tation facet of sequence stratigraphy attracted consider-able criticism and placed an unwanted shade on amethod that otherwise represents a truly importantadvance in the science of sedimentary geology. Fixing thedamaged image of sequence stratigraphy onlyrequires the basic understanding that base-levelchanges can be controlled by any combination ofeustatic and tectonic forces, and that the dominance ofany of these allogenic mechanisms should be assessedon a case by case basis. It became dear that sequencestratigraphy needed to be dissociated from the global-eustasy model, and that a more objective analysisshould be based on empirical evidence that can actu-ally be observed in outcrop or the subsurface. Thisrealization came from the Exxon research group, wherethe global cycle chart originated in the first place:Each stratal unit is defined and identified only byphysical relationships of the strata, including lateralcontinuity and geometry of the surfaces bounding theunits, vertical stacking patterns, and lateral geometryof the strata within the units. Thickness, time for forma-tion, and interpretation of regional or global origin arenot used to define stratal units..., [which]... can beidentified in well logs, cores, or outcrops and usedto construct a stratigraphic framework regardless oftheir interpreted relationship to changes in eustasy（Van Wagoner et al., 1990）. The switch in emphasis from sea-level changes torelative sea-level changes in the early 1990s （e.g., Huntand Tucker, 1992; Christie-Blick and Driscoll, 1995）marked a major and positive turnaround in sequencestratigraphy. By doing so, no interpretation of specificeustatic or tectonic fluctuations was forced uponsequences, systems tracts, or stratigraphic surfaces.Instead, the key surfaces, and implicitly the stratal unitsbetween them, are inferred to have formed in relationto a more neutral curve of relative sea-level （base-level） changes that can accommodate any balancebetween the allogenic controls on accommodation.