



潘家华, Eric De CARLO, 刘淑琴, 杨忆, 游国庆. 西太平洋富钴结壳生长与富集特征[J]. 地质学报, 2005, 79(1): 124-132

西太平洋富钴结壳生长与富集特征 [点此下载全文](#)

[潘家华](#) [Eric De CARLO](#) [刘淑琴](#) [杨忆](#) [游国庆](#)

中国地质科学院矿产资源研究所, 美国夏威夷大学海洋系, 中国地质科学院矿产资源研究所, 中国科学院研究生院, 中国地质科学院矿产资源研究所 北京, 100037, 夏威夷, 96822, 北京, 100037, 北京, 100039, 北京, 100037

基金项目: 中国大洋协会项目 (编号 DY10 5 -0 1-0 1-0 7), 国家自然科学基金资助项目 (编号 40 3 73 0 0 2 ) 资助的成果

DOI:

摘要点击次数: 190

全文下载次数: 94

摘要:

通过对西太平洋麦哲伦海山区富钴结壳的大尺度细致研究, 笔者较为深入地探讨了该区结壳的生长与富集特征。研究表明, 该区结壳自古近纪开始生长, 生长速率变化范围为 1.5~12.3 mm/Ma, 速率相差近一个数量级, 平均生长速率为 3.81 mm/Ma; 生长过程中成矿元素的地球化学行为呈现明显差异; 环境发生“骤变”的 O/M 界面, 可能是结壳生长过程中其构造和色泽发生“突变”的一个重要年代; 成矿元素成分的时序演化主要受控于海水化学和各种不同地质作用的综合影响, 成矿与非成矿地质作用在生长过程中呈现为互为消长的特征。研究发现, 该区结壳和太平洋深海粘土元素的分配系数间存在着显著的线性相关关系, 相关系数为 0.89, 显示它们有相近的元素富集机理。此外, 笔者还从元素的滞留时间、阳离子的电子键能及其在海水中的水解行为与结壳富集特征间的关系进行了探讨。

关键词: [西太平洋](#) [富钴结壳](#) [特征](#)

Growth and Enrichment Characteristics of Co-rich Crusts in the Western Pacific [Download Fulltext](#)

PAN Jiahua 1), Eric De CARLO 2), LIU Shuqin 1), YANG Yi 3), YOU Guoqin 1) 1) Institute of Mineral Resources, Chinese Academy of Geological Sciences, Beijing, 100037 2) Oceanogeography of Hawaii University, U.S.A., Hawaii, 96822 3) Graduate School of

Fund Project:

Abstract:

Detailed researches on the growth and enrichment characteristics of Co-rich crusts from the Magellan seamounts in the Western Pacific have been approached in the paper. The studies show that the crusts have been growing since the Paleogene, and that the growth rate varies from 1.5 to 12.3 mm/Ma, showing a difference of almost one order of magnitude between them. The mean growth rate is 3.81 mm/Ma. There are remarkable differences in the geochemical behaviors of ore-forming elements during the growth. The environmental change around the O/M boundary, which probably corresponds to abrupt changes in the structure, color and luster in profile, hints an important message on the growth age. The temporal evolution of ore-forming elements is mainly controlled by a combined effect of the properties of seawater chemistry and the actions of various geological agents. The minerogenetic and non-minerogenetic processes are closely related and affect each other during the growth. A striking linear relationship between the partition coefficients of Co-rich crusts and pelagic clays is found, illustrating their similar mechanism of element enrichment. Besides, the paper also discusses the relations between the element's mean retention time, the electron binding energies of cations and their hydrolysis in seawater as well as the enrichment of Co-rich crusts.

Keywords: [Western Pacific](#) [Co-rich crust](#) [characteristics](#)

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

您是第585624位访问者 版权所有《地质学报(中文版)》

地址: 北京阜成门外百万庄26号 邮编: 100037 电话: 010-68312410 传真: 010-68995305

本系统由北京勤云科技发展有限公司设计

