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20世纪地质科学学科体系的发展与演变——根据地质论文统计分析

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摘要：

地质科学100年的发展折射了20世纪经济发展和社会进步的曲折过程，地质学科的演化反映了工业化对矿产资源的依存度和社会进步对地质学科布局的深刻影响。通过对20世纪100年世界地质科学论文的统计、分析和综合，从计量的角度获得了反映地质科学及其各学科发展和演化的轨迹，包括：①见证了地质科学的发展动力从“供给驱动型”向“需求驱动型”的转变；②记录了工业化过程中对矿产资源的需求对地质科学发展和演变的影响；③反映了过去100年重大历史事件对地质科学发展的影响；④体现了技术进步是地质科学发展的革命性推动力；⑤揭示了我国与发达国家地质科学发展的差距。运用学术论文定量分析地质科学长周期发展规律，用数据反映地质学科的百年兴衰，是研究地质科学发展战略的新思路、新方法。

关键词：地质科学 学科体系 地质论文 矿产资源 地质工作 科技文献

The Development and Evolution of Geoscience System in the 20th Century --Evidence from Statistic Analyses of Geoscience Papers

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Abstract:

The 100-year development of the geological sciences reflects the meandering history of economic development and social progression in the 20th century, especially the dependence of industrialization on mineral resources and profoundly affection of social progression on the structural development of the geological sciences. The development and evolution paths of geoscience and its branch sciences in the point of computation view are derived in this paper, through the statistics and integration analyses of the international geological documents in the 20th century recorded in GeoRef database. The paths provide testimony of the point that the impetus of the development of geological sciences was changed from feeding to demanding, and record and reflect the affections of momentous historical events and mineral resource demanding during industrialization procedure on the development of geosciences. The paths also objectify that technological progression is the original revolutional impetus on the development of geosciences, and reveal that there is gap between geosciences in China and developed countries. It is a new method and idea to review quantitatively the long periodical developing principle of geosciences in the term of knowledge structure and the prosperity and declining of geological branch sciences through the application of statistics of the published scientific documents in 100 years.

Keywords:geosciences knowledge structure documental statistics 20th century

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