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Prediction Theory and Technique of China National Mineral Resource Potentiality

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The assessment of national mineral resource potentiality (from 2006 to 2013), which was organized and supervised by China Ministry of Land and Resources, is an important investigation and research on the state situation of mineral resources. This great work is not only a systemic summary and upgrade on national geological data since the foundation of People's Republic of China, but also an innovation and development on the assessment theories and techniques of mineral resource metallogenic prognosis, which is the foundation of Chinese characteristic theory and techniques on assessment of mineral resource potentiality. Under the direction of the metallogenic series theory, the prospecting types of mineral resources were plotted out. Meanwhile, the metallogenic rules were summarized and the metallogenic models were built. The comprehensive study on the metallogenic backgrounds of the geological elements on mineral resources prediction, tectonic structures and series mapping was carried out. Useful geological prospection information was extracted by taking full advantage of data of geophysical and geochemical exploration, remote sensing and natural placer, based on which the comprehensive information maps were compiled. Through making full use of the spatial database and GIS, comprehensive ore-prediction models were built; different metallogenic prospecting districts were delineated and the metallogenic geological bodies and ore-forming systems were determined. Furthermore, the resource potential was estimated by the method of the geological parameters of deposit model.

