

综合评述

瑞雷面波在多尺度勘探上的研究现状与展望

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摘要 近年来,瑞雷面波勘探的理论研究与实际应用技术发展迅速。根据瑞雷面波的传播特性,瑞雷面波勘探研究及应用范围广泛,从地球内部地壳和上地幔的构造研究(大尺度勘探)到石油地震勘探(中尺度勘探)再到工程勘探(小尺度勘探)以及物体内部特性变化的检查(甚小尺度调查)均有涉及且应用效果良好。因此可以说瑞雷面波法既是研究地球宏观构造的“望远镜”,又是调查物体局部特性变化的“显微镜”。对瑞雷面波勘探的理论研究以及在各尺度勘探的应用情况进行了综述,并对瑞雷面波勘探的理论研究和应用前景进行了展望。

关键词 [瑞雷面波法](#); [频散曲线](#); [勘查尺度](#); [多尺度](#)

Review of Rayleigh wave techniques in survey of different scales and its future prospects

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Abstract Surface wave technology is one of the fields of seismology, which has made great progress both in theory and in practice recently. Based upon the deep and persistent studies on the propagation characteristics of surface waves with various origins, this technology has been developed to include: the study on the deep structure of the Earth's crust and mantle (ultra-deep survey), oil explorations (medium survey), the near surface investigations for geotechnical purpose (shallow survey), and the dislocation detection of material (ultra-shallow survey). In other words, surface wave techniques has played roles not only as a "Telescope" which can see through the macro-scale structure of the Earth, but also as a "Microscope" detecting various near-surface features in small scale. Maybe, among all the existing geophysical methods, nothing is more widely applied to such multifarious problems than the surface wave techniques. This paper briefly summarizes the theoretical developments, the recent developing trends, the application domains and the future prospects, of the surface wave techniques.

Key words [Rayleigh wave technique](#); [dispersion curve](#); [survey scale](#); [multi-scale](#)分类号 [P631](#)

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