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起伏地表问题

近地表信息的获取及在地震数据处理中的应用

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摘要 在野外采集阶段，获取详细的近地表信息的目的是了解表层结构，选择有利的激发、接收岩性，认识地震波在表层的传播规律，为室内静校正、地表一致性等处理提供参考资料。简要介绍了几种近地表信息的获取方法，如卫星照片、遥感图像及地质雷达探测等，说明了表层信息在地震数据处理的静校正、噪声分析、速度分析等环节中的应用情况。在表层结构复杂的地区，地震数据中噪声严重，各种干扰发育，数据处理的难度较大，如果能充分利用近地表信息，研究表层结构、岩性等对数据品质的影响，将近地表的特征与地震数据的变化对比分析，可以帮助处理人员认识静校正问题根源、噪声的产生机理、叠加速度的选择和成像中的问题，以便在处理中选择适当的参数、制定合理的流程，提高处理精度。

关键词 野外采集；近地表信息；数据处理；静校正；噪声压制；速度分析

Acquisition of near surface information and its applications in seismic data processing

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Abstract In field acquisition, the aims of acquiring detailed near surface information are to determine the near surface structure, select favorable exciting and receiving lithology, understand the law of seismic wave propagation in near surface, and provide necessary information for data processing methods such as statics and surface consistency. This paper introduced briefly several near surface acquisition methods like satellite photo, remote sensing image, and penetrating radar detection, and described the applications of near surface information in seismic data processing such as statics, noise suppression, and velocity analysis. In areas of complex near surface structure, seismic data are contaminated by interferences, and are difficult to be processed. If making full use of the near surface information in studying the effects of near surface structure and lithology on data quality, data processors will better understand the sources of statics and behaviors of noises, select proper stacking velocity, and cope with problems in migration by selecting proper parameters and establishing reasonable workflow.

Key words field acquisition; near surface information; data processing; statics; noise suppression; velocity analysis

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