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论文

液体表层层状介质导波频散曲线研究

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摘要 随着地震勘探向浅海、湖泊等流体覆盖层的渗透，存在液体表层或夹层介质中导波的传播研究受到人们重视.在前人研究工作的基础上，本文对存在上覆液体层时的两层、三层以及低速夹层的固体层状介质模型的频散曲线进行了数值计算，分析了当上覆液体表层的厚度变化时多模式导波频散曲线特征.通过与没有液体表层时的完全固体介质模型相对比，研究了存在上覆液体表层时多模式导波频散曲线独特的形态特征，进一步引伸出在滩浅海进行地震勘探中应注意的问题.为在滩浅海及湖泊等表层为液体覆盖层的地区利用导波进行勘探和研究提供一定的研究思路和理论依据.

关键词 频散曲线 导波 层状介质 液体层

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A study on dispersion curves of guided wave in layered media with overlying liquid surface

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Abstract With seismic exploration extending to liquid covered areas(such as shallow sea and lakes), much attention is being paid to the propagation of the guided wave in media underlying a liquid layer or with interlayers. Based on previous researches, we calculate the dispersion curves respectively for two layer, three layer and a low speed inter layer models, which are covered with a liquid layer. We analyze the different characteristics of the multi made guided wave, for varied thickness of the liquid layer. We compare the geometric characteristics of the multi mode dispersion curves to those of that without a liquid surface. And then, we point out some problems which should be taken into consideration when seismic exploration is applied in off shore areas. The study in this paper may provide some thoughts and theoretical bases for guided wave exploration in liquid covered areas.

Key words Dispersion curve; Guided wave; Layered medium; Liquid layer

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