基于BISQ机制三维双相正交裂隙各向异性介质衰减及频散方位特性研究

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The study on azimuth characteristics of attenuation and dispersion in 3D two-phase ortho mechanism

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摘要 对于复杂裂隙介质,双相各向异性介质模型更能真实地反映实际地层特征.本文基于BISQ机制推导了三维双相各向异性 散方程,给出了用于确定相速度和逆品质因子的波数方程及其表达式,研究了固体骨架各向异性、固流耦合效应各向异性、渗 异性对衰减及频散的影响,并对频散和衰减的方位特性进行了分析,为预测储层流体的存在、分布以及孔隙结构提供有力的理 得多方位储层地球物理参数联合反演具有可行性.

关键词： BISQ机制　双相正交介质　衰减　速度频散　方位特性

Abstract： Considering the complexity of subsurface medium, two-phase anisotropic model can veritably the actual medium characteristics. Based on BISQ mechanism, this article derives the dispersion equation two-phase anisotropic medium, and gives the wave-number equation and expression used to derive phas and $1/Q$. Then we investigate the effects of the solid skeleton anisotropy, the solid/fluid coupling anisotr permeability anisotropy on attenuation and dispersion, and also make analysis of the azimuth characteris attenuation and dispersion. All of these studies can provide powerful theoretical criteria for predicting th existence and distribution of fluid in reservoir and the pore structure, and make multi-azimuth joint invers reservoir geophysical parameters be feasible.

Keywords： BISQ mechanism　Two-phase orthotropic medium　Attenuation　Velocity dispersion　Azim characteristics