

应用地球物理学

关于两相饱和介质中流相Green函数的解析解

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摘要 自然界中许多动力学问题需要用两相饱和介质Green函数求得解答, 本文在两相饱和介质位移场Green函数解答的基础上, 求得的有关饱和和流体孔隙压力, 进、排流体流量等三个Green函数. 从而使两相饱和介质涉及流体问题的Lamb方程能完整地使用. 论文在推导过程中详细地阐述了流体三个Green函数的物理意义, 并将所得结果与Chen (1994) 的纯数学的结果作了对比. 最后文章讨论了解析解的稳定性.

关键词 [两相饱和介质](#) [流体问题](#) [Green函数](#)

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The solution of Green function of fluid phase in two-phase saturated medium

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Abstract A large number of kinetic problems in nature need to employ the Green function of two-phase saturated medium for solutions. In this paper the authors based on the displacement Green function of two-phase saturated medium, and obtained three relevant Green functions of saturated fluid for the pressure of pore, the flux of fluid inflow or outflow respectively. Thereby, Lamb integral equation of two-phase saturated medium can be applied completely. In the process of derivation the physical significance of three Green functions of fluid phase is expounded elaborately and in detail. Moreover, the results of this paper are compared with Chen's results (1994) which are purely mathematical. There is a discussion on the stability of solutions at the end of the paper.

Key words [Two-phase saturated medium](#); [Problem of fluid phase](#); [Green function](#)

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