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The relationship between hydraulic transmissibility factor and consolidation coefficient for the saturated geo-granular medium[1] ZHIFANG ZHOU, Hohai University, HU ZHENG COLLABORATION — The values of transmissibility factor coefficient and consolidation coefficient are generally considered as equal due to the clearly resemble between seepage-deformation control equations and consolidation equations in form for the saturated geo-granular medium. Therefore, the transmissibility factor obtained by in-situ seepage experiments is always used in soil consolidation caused ground settlement prediction, and consolidation coefficient is also widely used in seepage caused ground settlement problems. However, only a limited amount of information is available about the interrelationship between these two parameters. In this work, we present an analytical method to analyze the differences and relations between hydraulic conductivity and consolidation coefficient. Two different kinds of representative elementary volume (REV) would be proposed based on the physical model of seepage and consolidation. It is found the transmissibility factor and consolidation coefficients are two different parameters with different values, but can be connected by a certain model. Our results indicate consolidation coefficient is 1/(1-n) bigger than conductivity coefficient, where n is porosity of geo-granular medium.

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