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考虑节理面法向蠕变的节理岩体蠕变模型

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摘 要：采用Fish语言对FLAC^{3D}软件中的Interface单元进行修正，将Interface单元的法向刚度和切向刚度转化为时间的蠕变函数，便可得到在数值分析中考虑节理面法向蠕变的节理岩体蠕变模型。计算结果表明：节理岩体的单轴蠕变量随着节理面间距的增大而减小；当节理面的倾角小于45°时，节理岩体单轴蠕变量随着节理面倾角的增大而增大，但当节理面倾角大于45°时，轴向蠕变量反而随着节理面倾角的增大而减小；若固定节理面的切向蠕变参数，增加其法向蠕变参数，则节理岩体的轴向蠕变量也会随之减小。

关键字：蠕变模型；节理岩体；法向刚度；切向刚度；FLAC^{3D}软件

Creep model for rock mass considering normal creep of rock joint plane

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Abstract: Revised by Fish language, the normal stiffness and shear stiffness of interface element in FLAC^{3D} were translated into creep functions of time, and the creep model for rock mass was realized in numerical analysis when considering normal creep of rock joint plane. The calculation results show that the uniaxial creep deformation for rock mass decreases with the increase of joint interval, and it increases with the increase of dip angle of joint plane if the angle is smaller than 45˚, while the result will be quite on the contrary if the angle is larger than 45˚. If the shear creep parameters of rock joint are constant, the uniaxial creep deformation will decrease with the increase of normal creep parameters.

Key words:creep model; rock mass; normal stiffness; shear stiffness; FLAC^{3D} software

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