Prediction Method of Deformation of Shield Tunnels due to Consolidation

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In order to predict the deformation of shield tunnels, this paper investigates the calculation method of long term tunnel deformation due to consolidation. Although it is required to take into account the non-linear behavior caused by the generation of cracks within the tunnel lining, it is difficult to apply the sophisticated segment-ring model to tunnel lining because of large calculation time and memory. Therefore, this paper proposes the empirical modeling method of the reduction of stiffness due to the generation and the enlargement of cracks and combines it with the soil-water-coupling analysis of tunnel deformation.