

عنوان مقاله:

The affect of shield operation parameters and overcut On existing tunnel in multi-level crossing tunnels

محل انتشار:

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خلاصه مقاله:

The development of transportation in large cities needs some new tunnels to be designed and constructed nearby existing tunnels. In this study a metro tunnel will be excavated by EBP shield at different level from the sewage tunnel and it's beneath. Both the relative position of tunnels and the excavation procedure of new tunnel effect the soil displacement and existing tunnel lining. Hence, the effects of shield operation parameters (face pressure, grouting pressure), overcut between shield skin and surrounding soil are studied using a 3D finite difference analysis. The results showed that the largest interaction effects occur at the invert of existing tunnel. Analysis result showed the effect on existing support system in longitudinal section of tunnel is larger than cross section. Most effect on support occurs when ground moves into overcut space. However, these affects decrease significantly with increasing the face pressure, grouting pressures and bentonite flow into steering gap between shield skin and surrounding soil.

کلمات کلیدی:

Tunnel, EBP shield, Operation parameters, Overcut, 3D numerical model

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