

## Numerical assessment of pile within the excavation damage zone during mechanized tunneling process

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### ABSTRACT

The mechanized tunneling is considered as a stable and safe tunneling method compared to the drill-and-blast method. For this reason, studies related to the excavation damage zone (EDZ) of mechanized tunnel and its effect has not been properly carried out. In this study, the behavior of piles within the EDZ during mechanized tunneling will be investigated through three-dimensional finite element large deformation numerical analyses. The results will be applied in quantifying the effect of mechanized tunneling process, and provide a guideline for actual engineering practice.

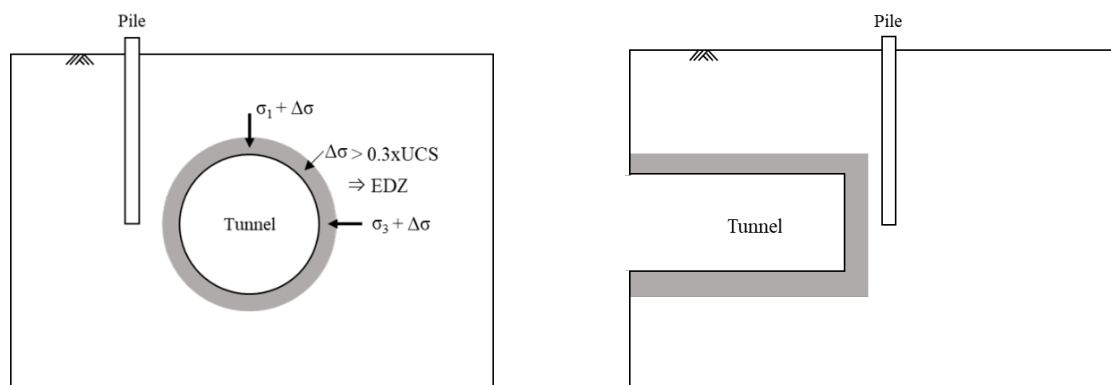


Fig. 1 Assessment of pile-tunnel interaction

### REFERENCES

Kim, D. (2021), "Large deformation finite element analyses in TBM excavation: CEL and auto-remeshing approach", *Tunnelling and Underground Space Technology*, 116, 104081

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