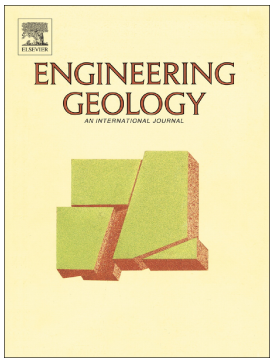

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Geohazards of tunnel excavation in interbedded layers under high in situ stress

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Abstract: In situ stress is one of the most important parameters that affect rock mass stability during tunnel excavation. High in situ stress may induce a series of geohazards, such as rockburst in strong rock and squeezing in weak rock. This paper presents a case study of a tunnel excavated using a tunnel-boring machine across interbedded strong and weak rock layers under high in situ stress in Pakistan. To estimate the induced geohazards during tunnel excavation, in situ stress was measured and the stability of the tunnel was analyzed using the finite element method. In situ stress measured in the strong rock layers shows that the maximum compressive stress is very high, and its direction is

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