TBM og bergslagsproblematikk Implikasjoner for fremtidige høyhastighetsbaner

Øyvind Dammyr, NTNU











Enkel spenningsbetraktning, k=0.33, σ_3 =9MPa







Mine by experiment Canada



$$\frac{R_f}{a} = 0.49 (\pm 0.1) + 1.25 \frac{\sigma_{\theta max}}{\sigma_c}$$

$$R_f/a = 0.49 + 1.25^* (72/150)$$

$$R_f/a = 1.09$$

$$R_f = 1.09 * 5$$

$$R_f = 5.45$$
Martin et al. (1999)

Depth of spalling = 5.45 - 5 = 45cm





Lötschberg basistunnel



Brenner pilottunnel (Aicha-Mauls), alvorlige spenningsytringer





Bergslag og blokkering av kutterhodet

Lining kollaps (Grandori et al. 2011)











Referanser

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