TBM og bergslagsproblematikk Implikasjoner for fremtidige høyhastighetsbaner

DVvind Dammyr, NTNU




Norsk vestlandstopografi



Enkel spenningsbetraktning, $\mathrm{k}=0.33, \sigma_{3}=9 \mathrm{MPa}$


2.


## Mine by experiment Canada


$\frac{R_{f}}{a}=0.49( \pm 0.1)+1.25 \frac{\sigma_{\theta \max }}{\sigma_{c}}$ $R_{f} / a=0.49+1.25^{*}(72 / 150)$
$R_{f} / a=1.09$
$\mathrm{R}_{\mathrm{f}}=1.09 * 5$
$\mathrm{R}_{\mathrm{f}}=5.45$
Depth of spalling $=5.45-5=\underline{45} \mathrm{~cm}$

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Martin et al．（1999）



Lötschberg basistunnel


Brenner pilottunnel (Aicha-Mauls), alvorlige spenningsytringer



Bergslag og blokkering av kutterhodet





Liten risiko for bergslag

## Referanser

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