Numerical modelling and seismicity at the Kiirunavaara Mine

Jessa Vatcher, Itasca Consultants AB
Jonny Sjöberg, Itasca Consultants AB
Mirjana Bošković, LKAB
Thomas Wettainen, LKAB

What's happening at the Kiirunavaara Mine?

Modified from ITASCA

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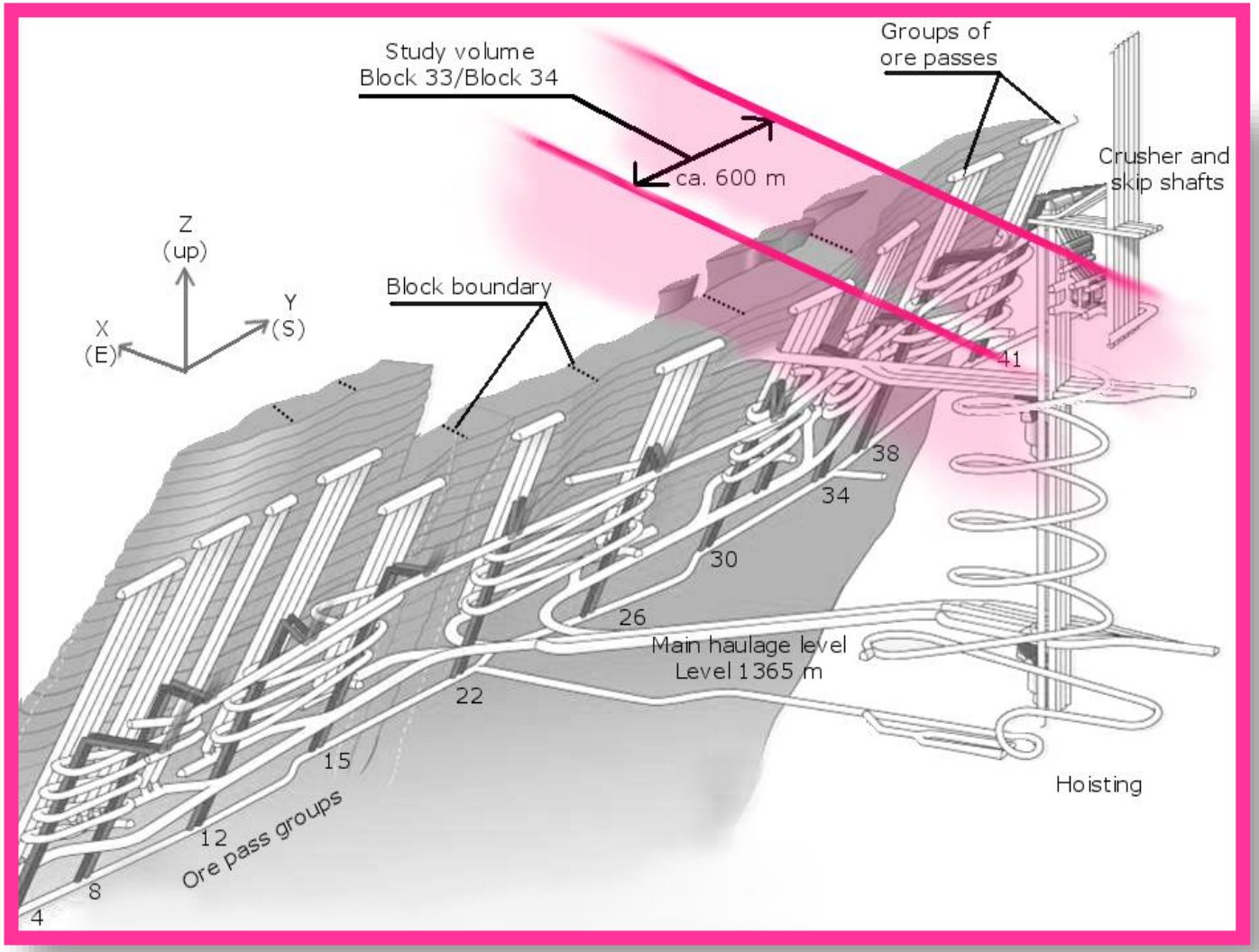

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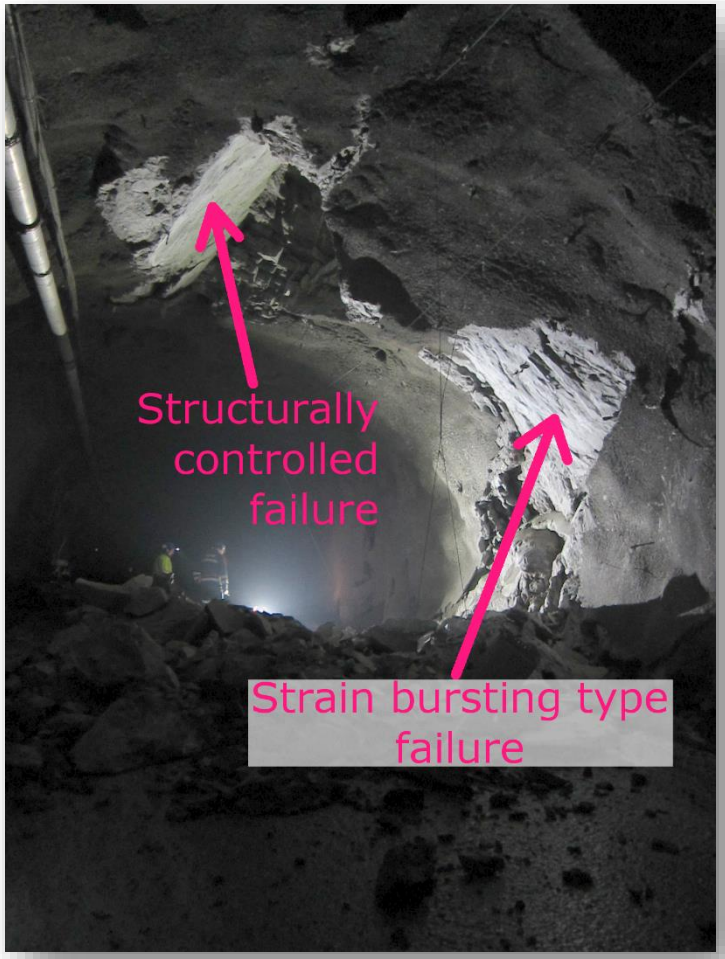

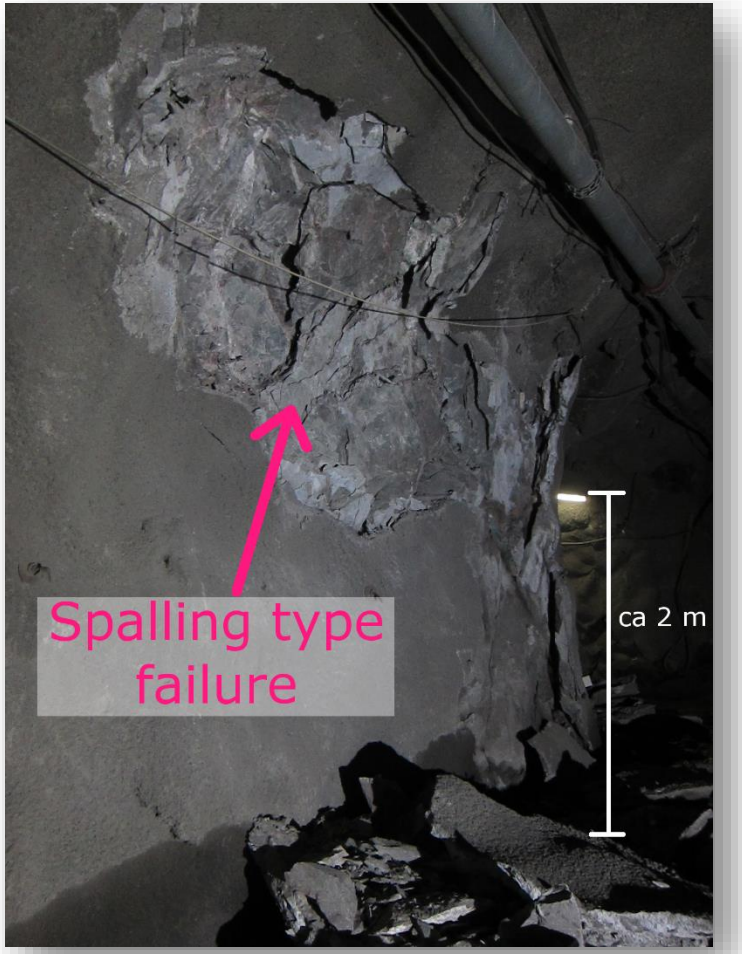

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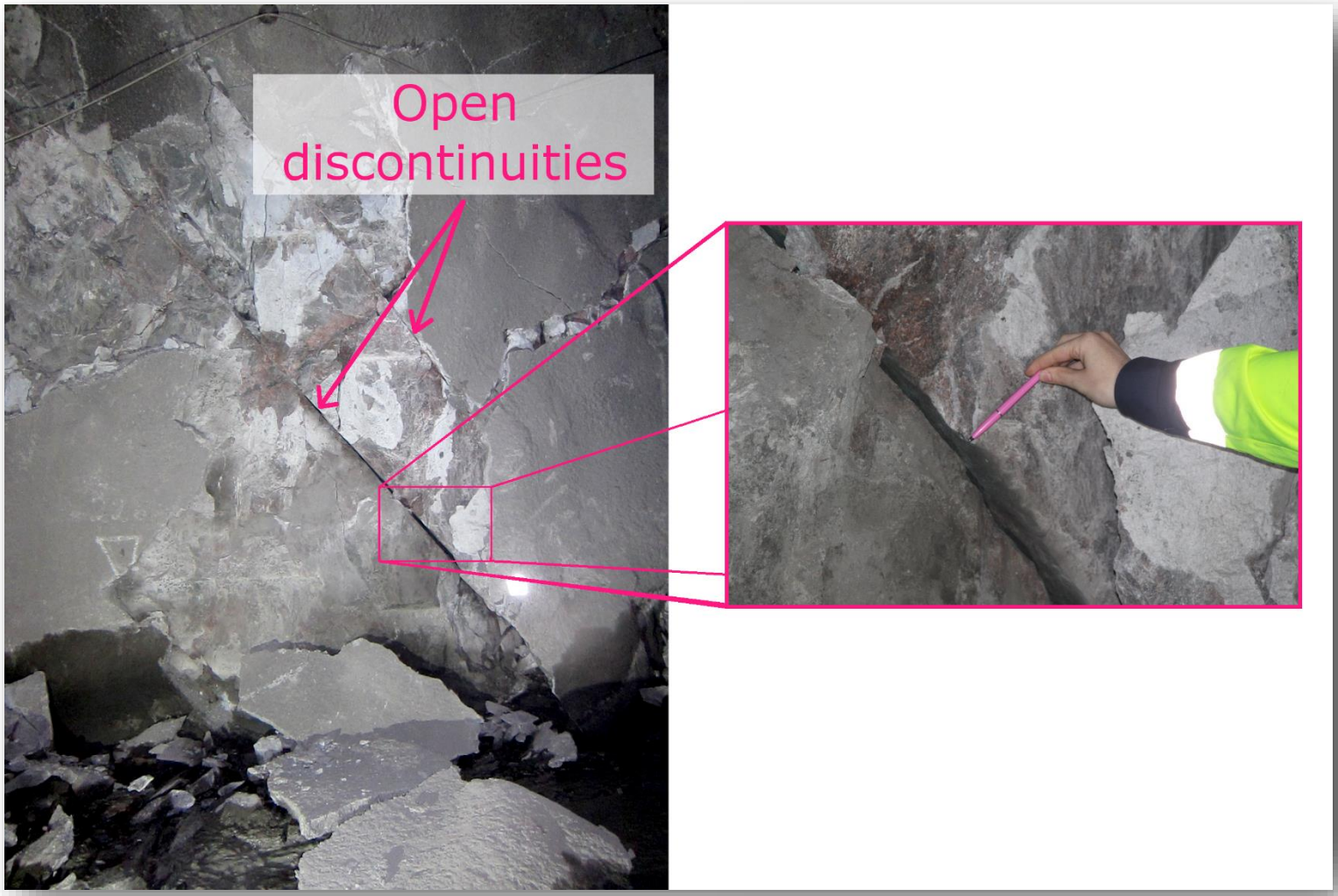
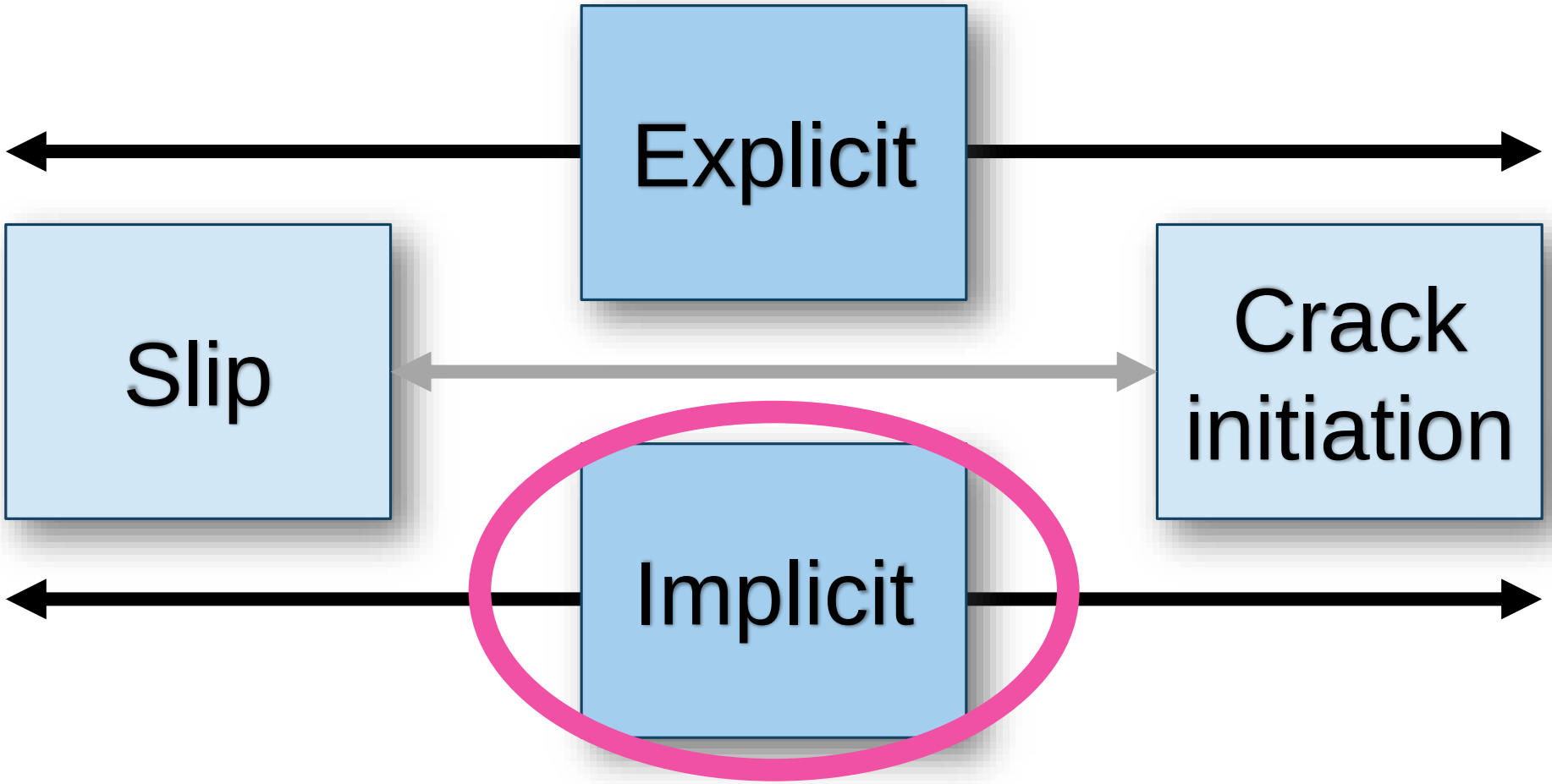
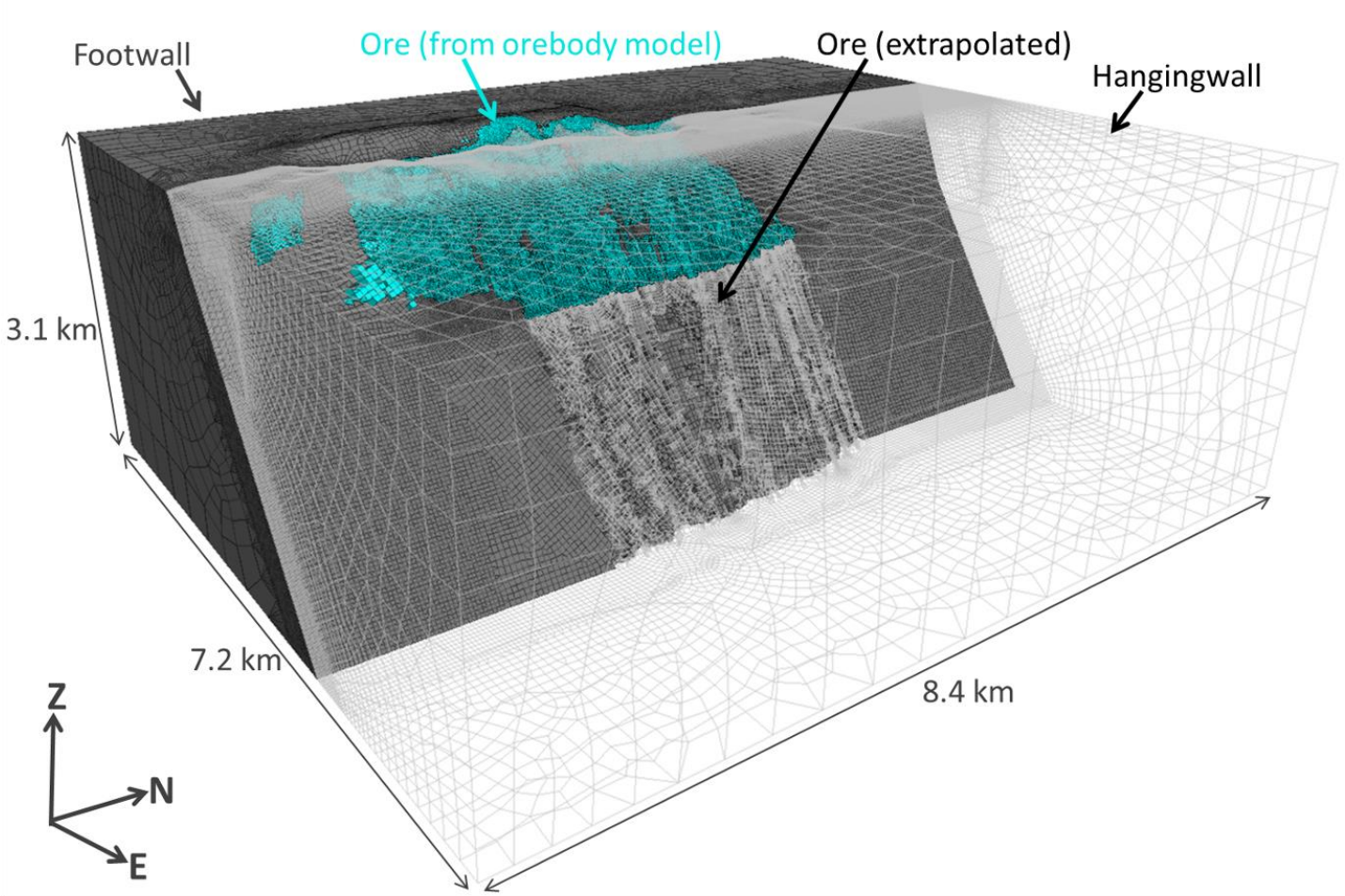


Mine seismicity… what do we know?

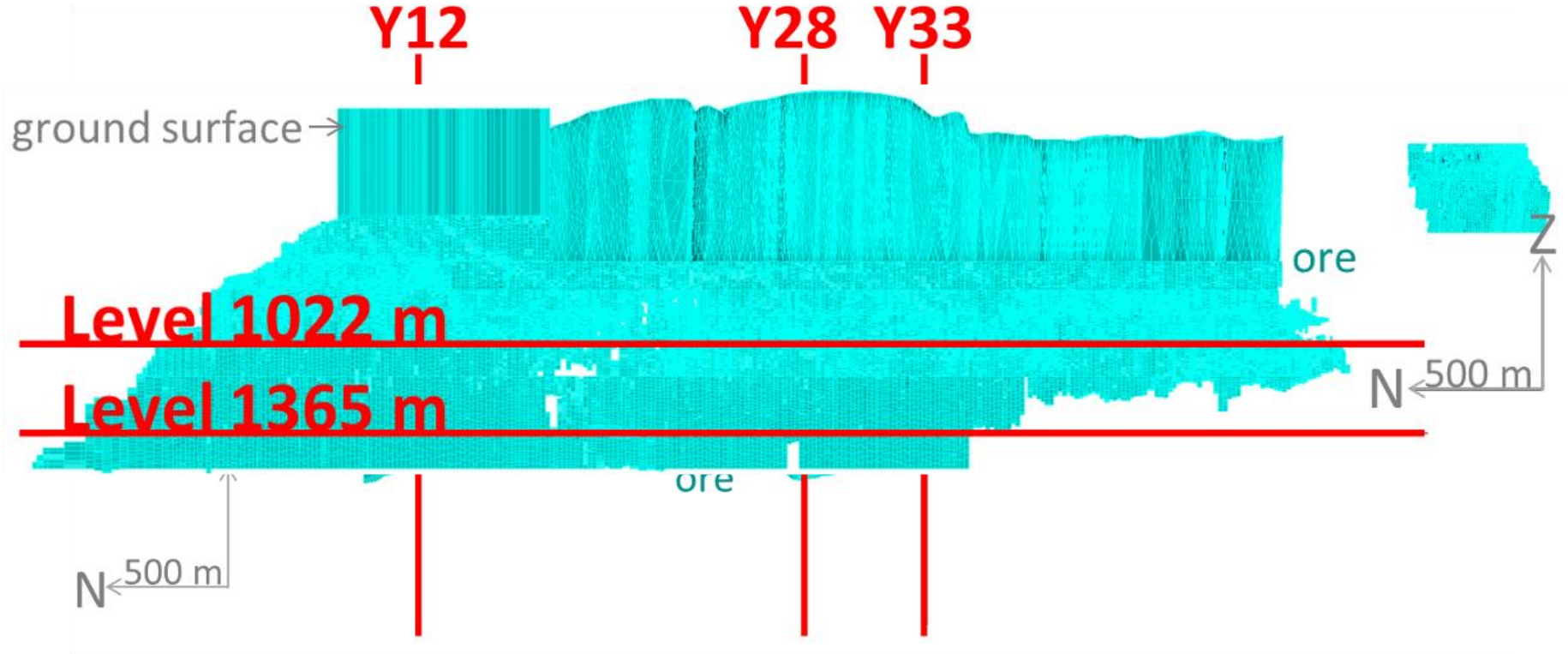
How do we represent mine seismicity?



More about the models…



Where was evaluation completed?



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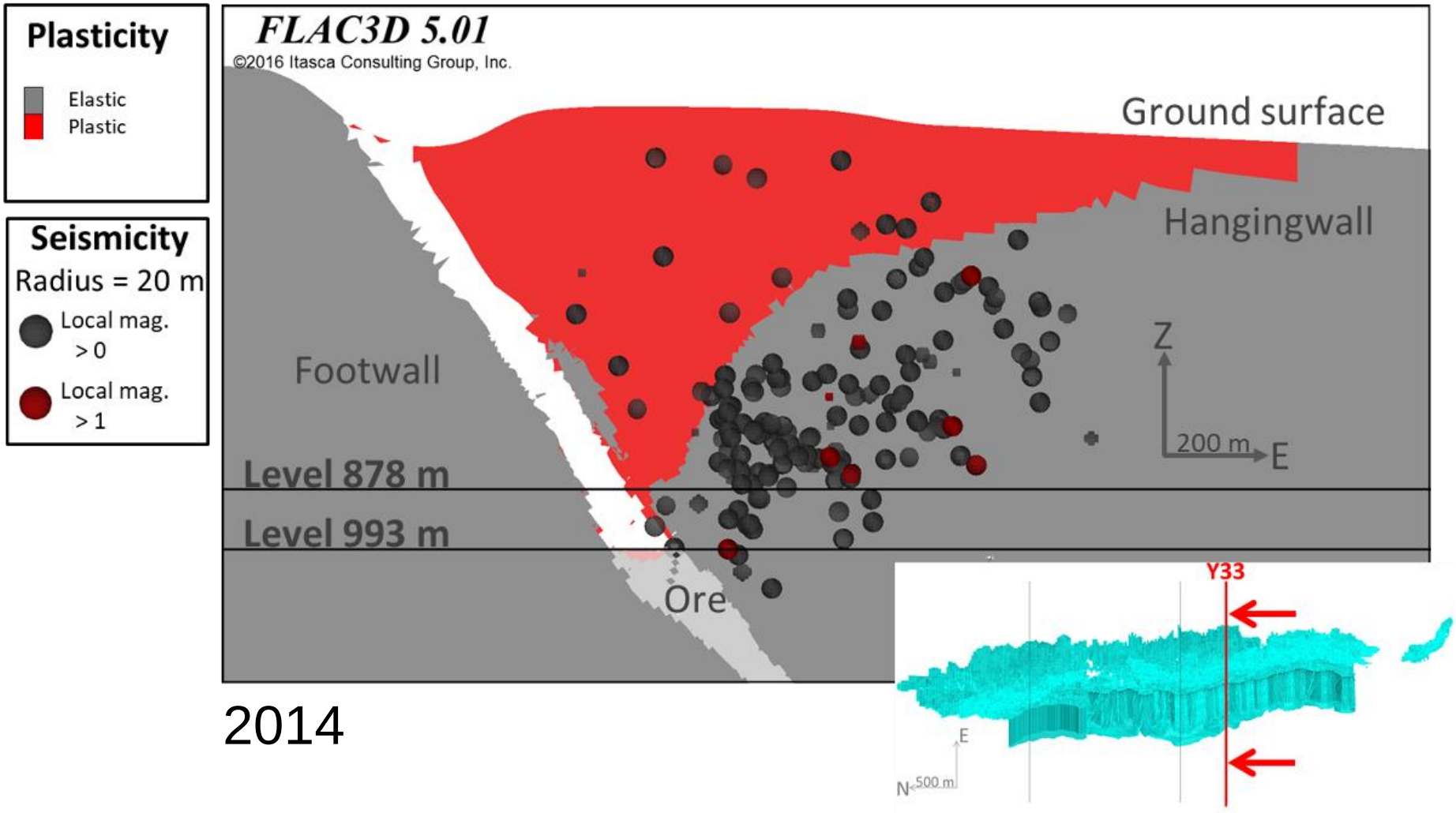
What we found in the hangingwall



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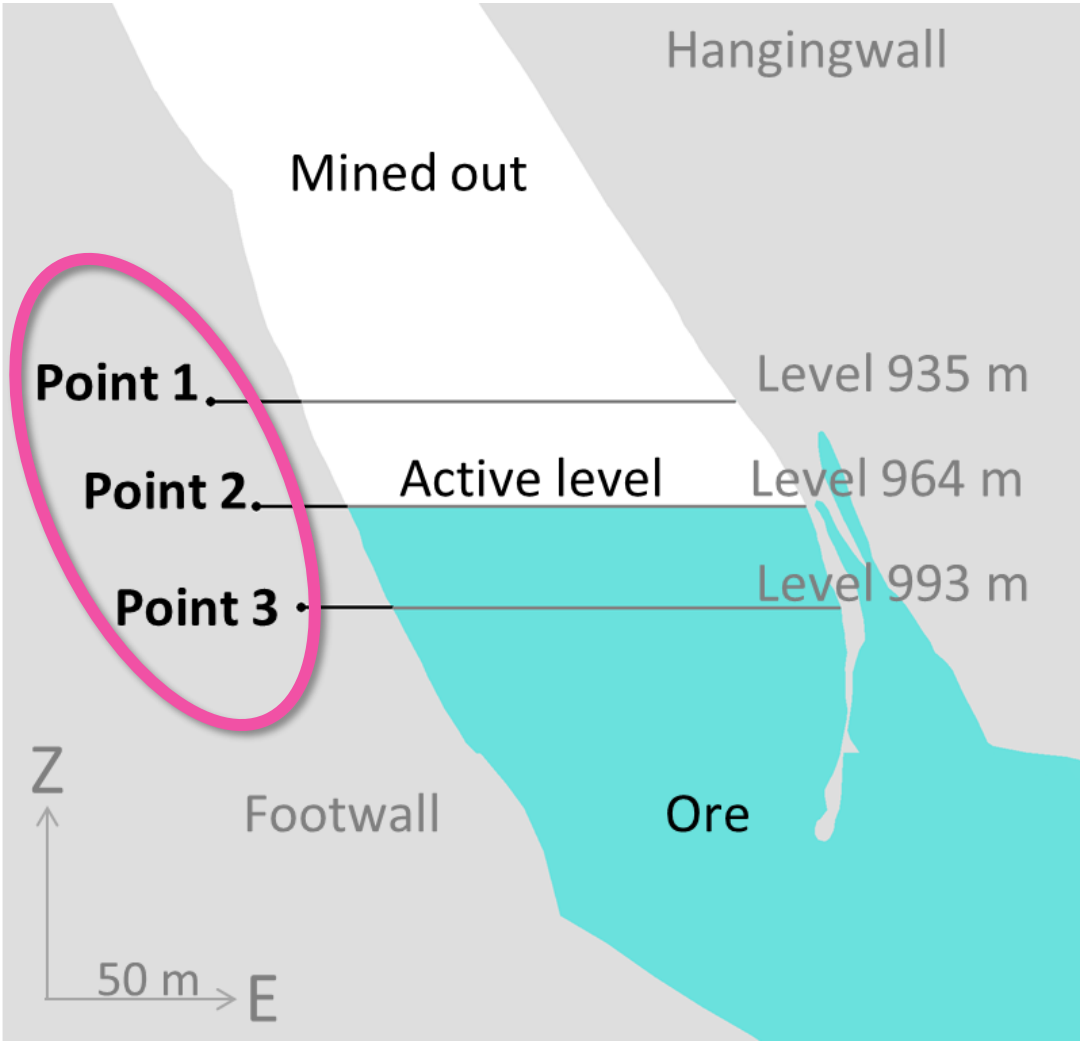
What about the footwall?



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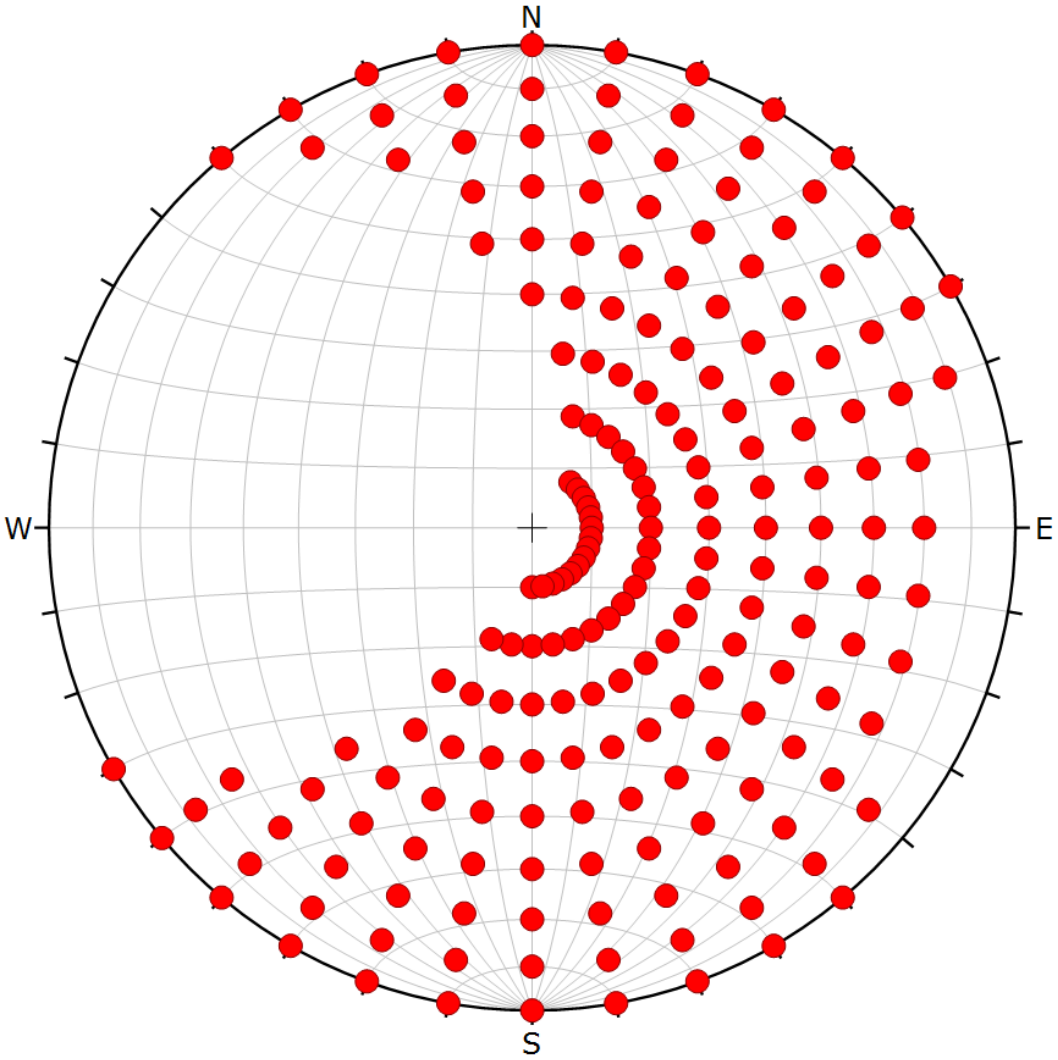

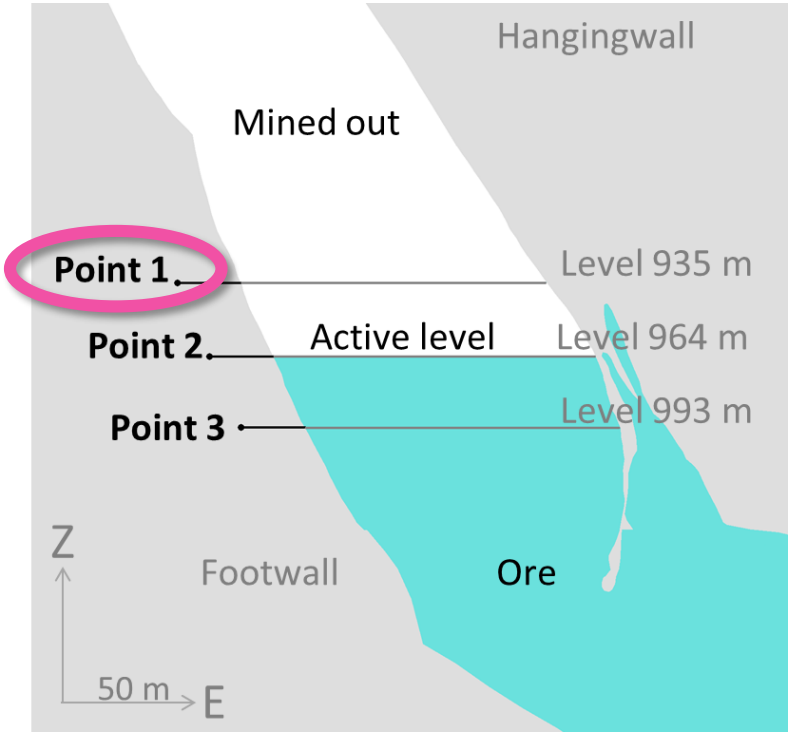

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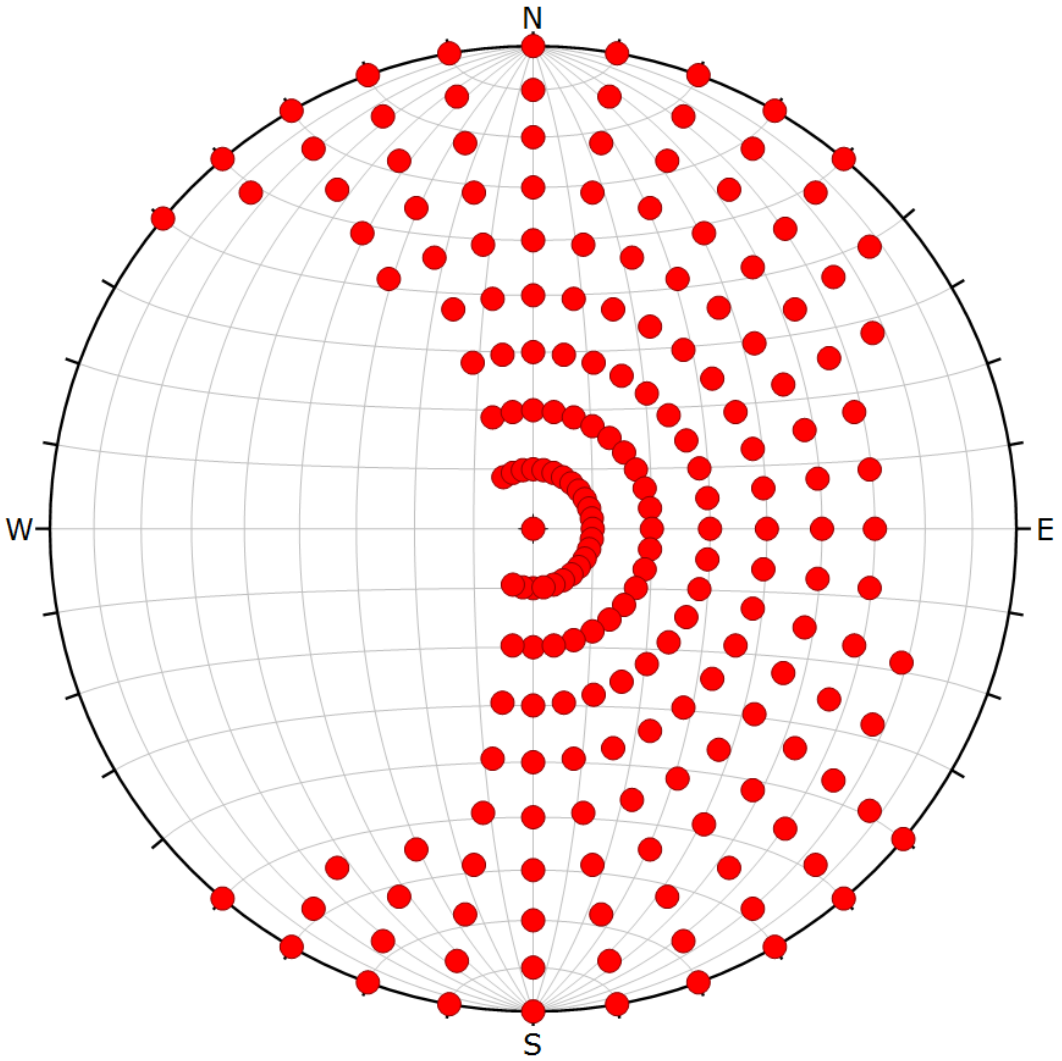

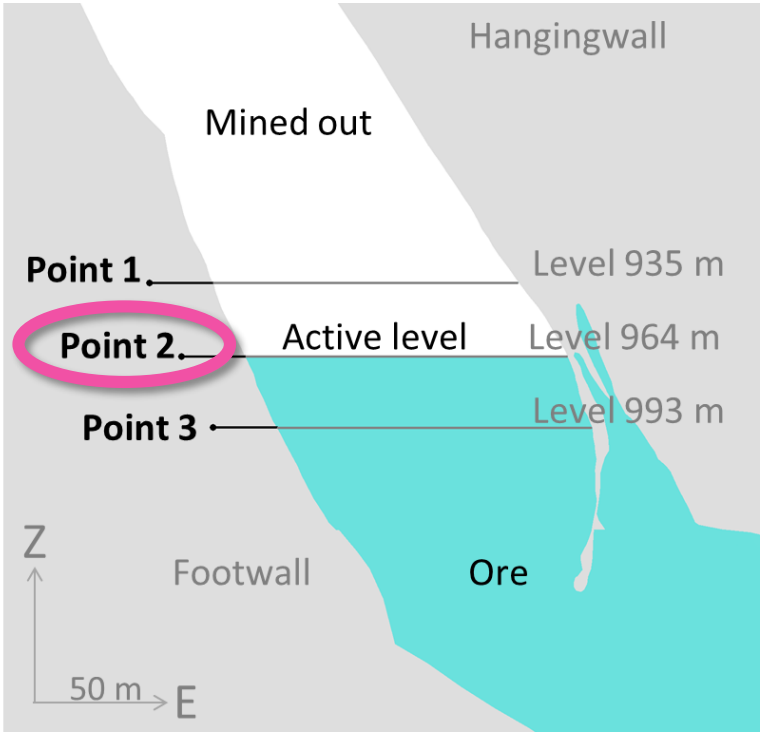

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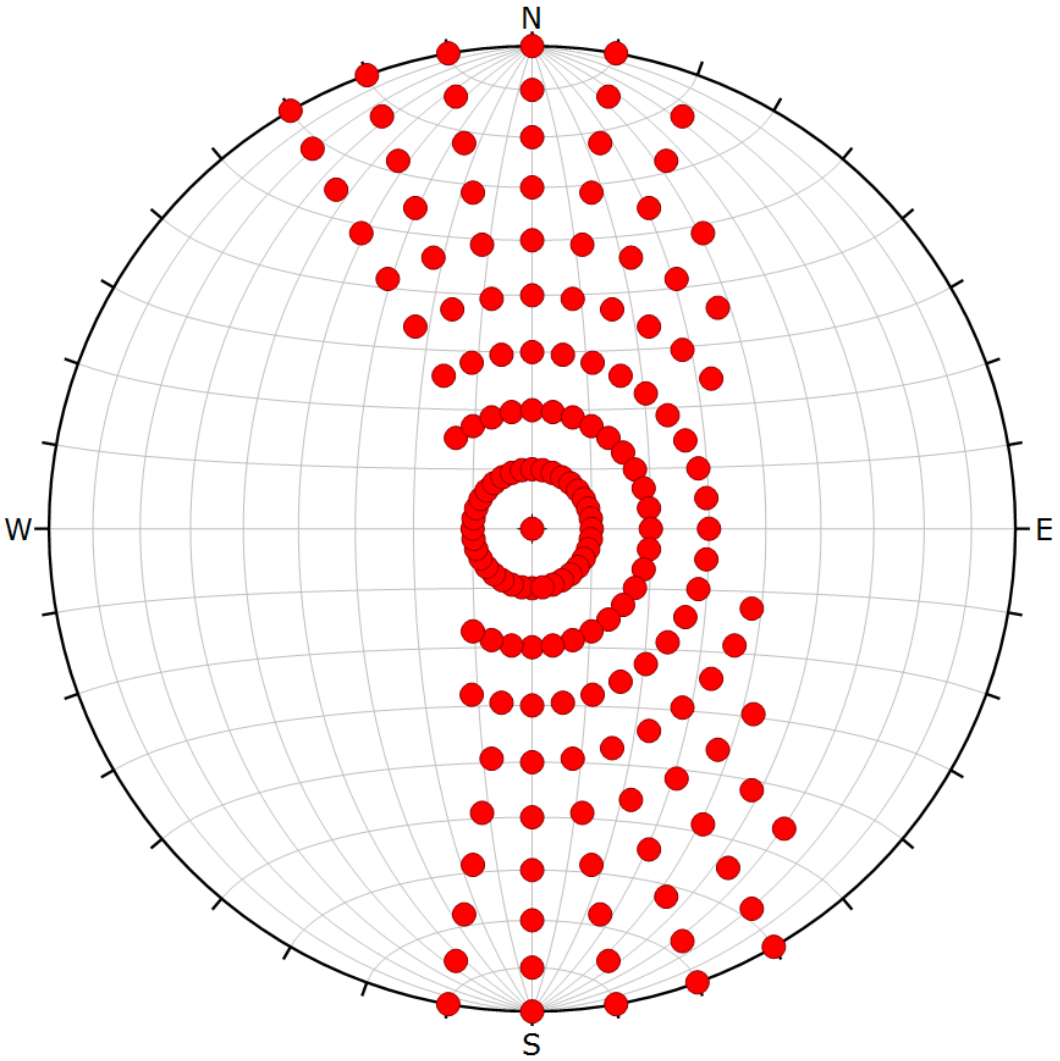

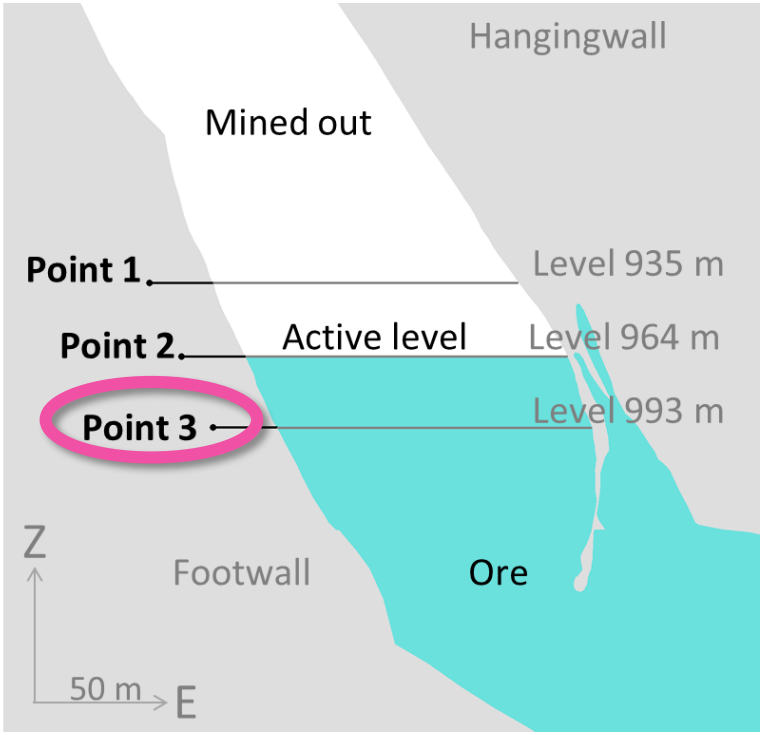

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Concluding remarks

- Correlations between plastic failure and seismicity in hangingwall exist
- Correlations between seismicity and indicators of crack initiation in the footwall not identified
- Patterns found in slip potential in the footwall
- No changes in seismicity identified
- Slip potential analysis was particularly interesting, and further exploration of the mechanisms of seismicity required

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