

**Can we explain the SO_4^{2-}
concentration by the observed
occurrence of
gypsum and modelled
groundwater flow?**



Andis Kalvāns



**LATVIJAS
UNIVERSITĀTE**
ANNO 1919



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Problem definition

- May it be that the high $[\text{SO}_4^{2-}]$ in the SW part of Latvia is a relict from geological past when groundwater flow patterns were different?

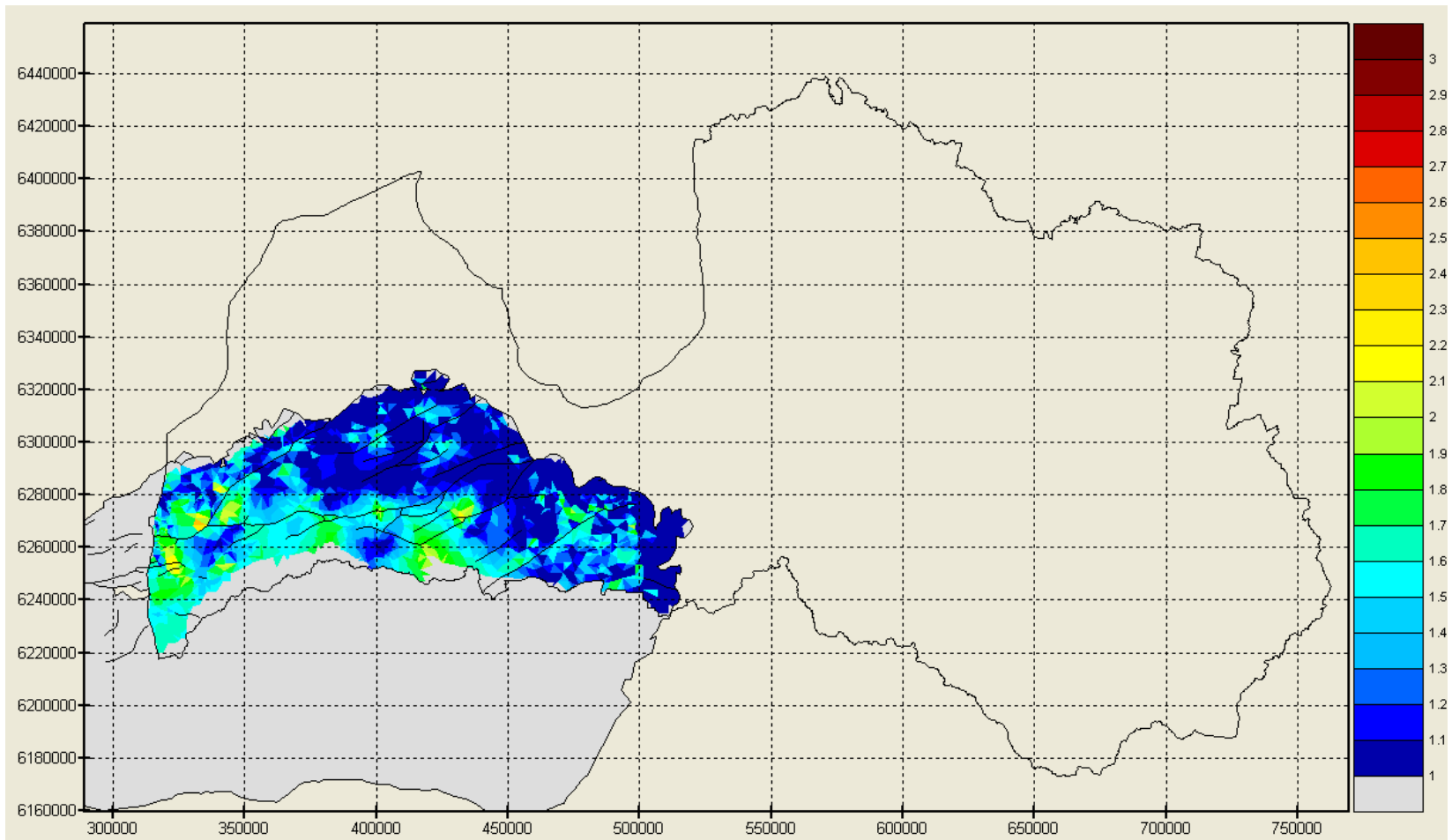


Method

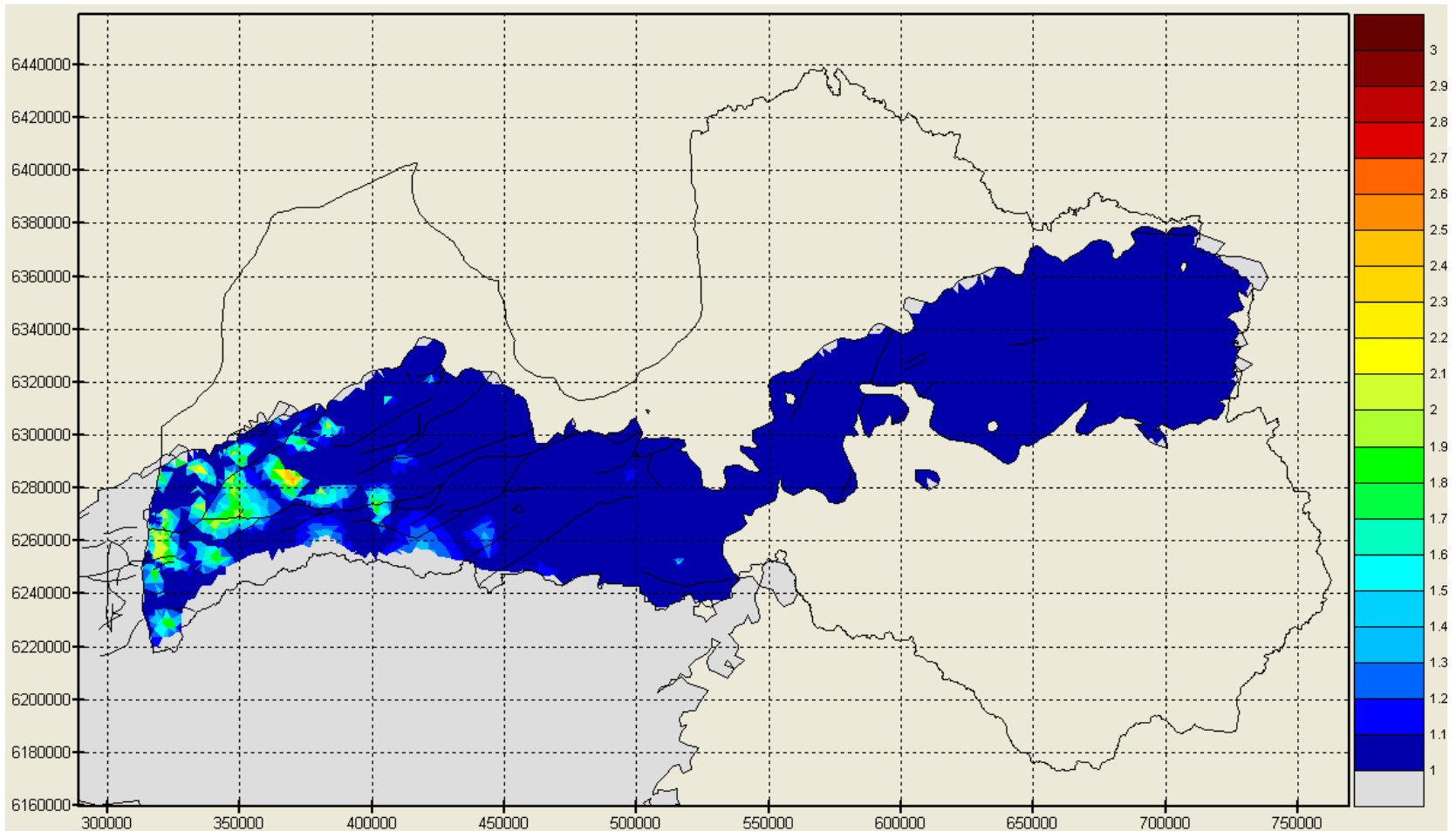
- Interpolation with radius 20 km (2E4 m)
- $[\text{SO}_4^{2-}]$ – the maximum value observed in the sampling point for each *strat* of V0
- Gypsum – a thickness normalised index for each *strat* of V0:
 - If gyps as primary mineral, score: 3
 - If gyps as secondary mineral, score: 2
 - No gypsum, score: 1



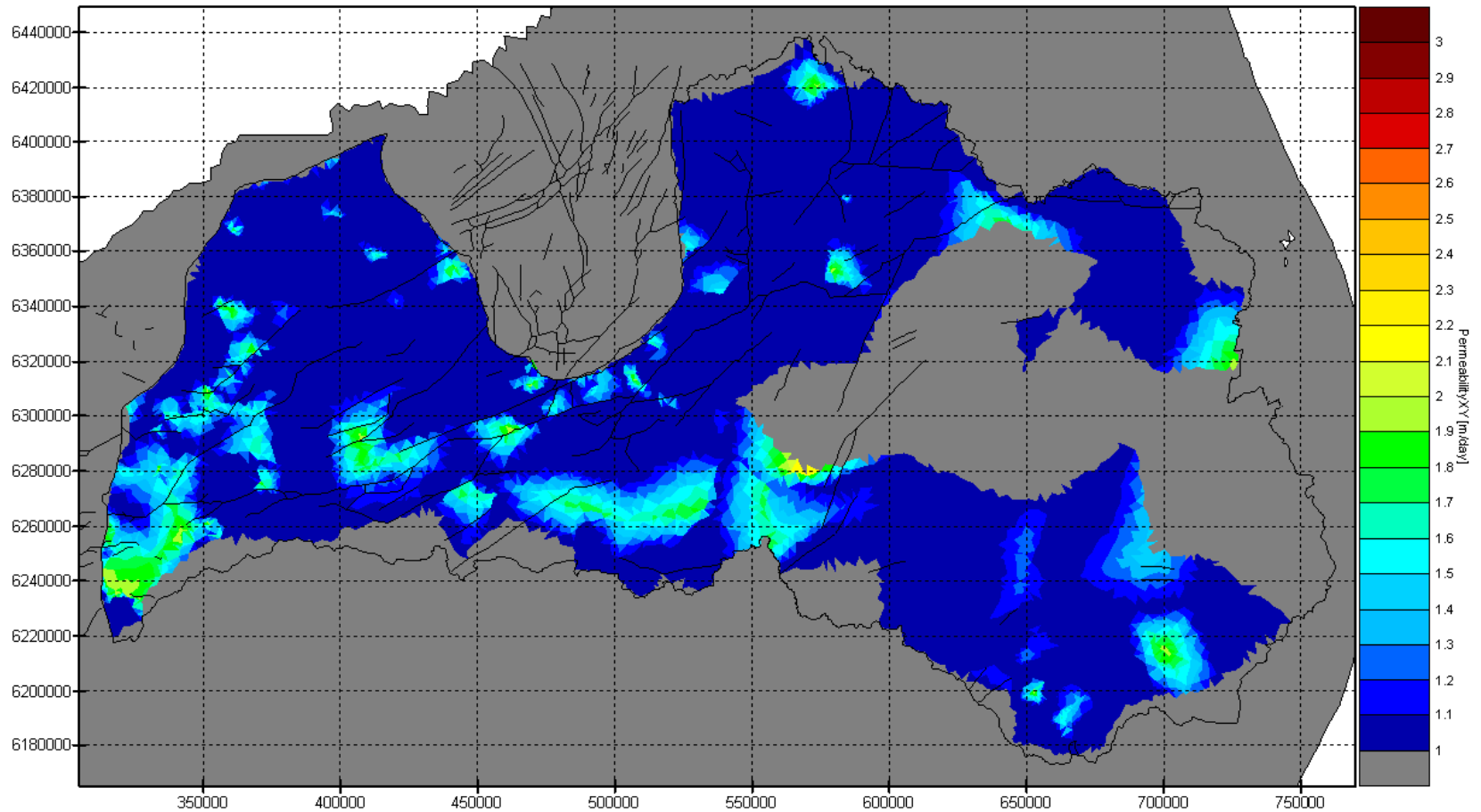
Gyps in D3 st-el formations



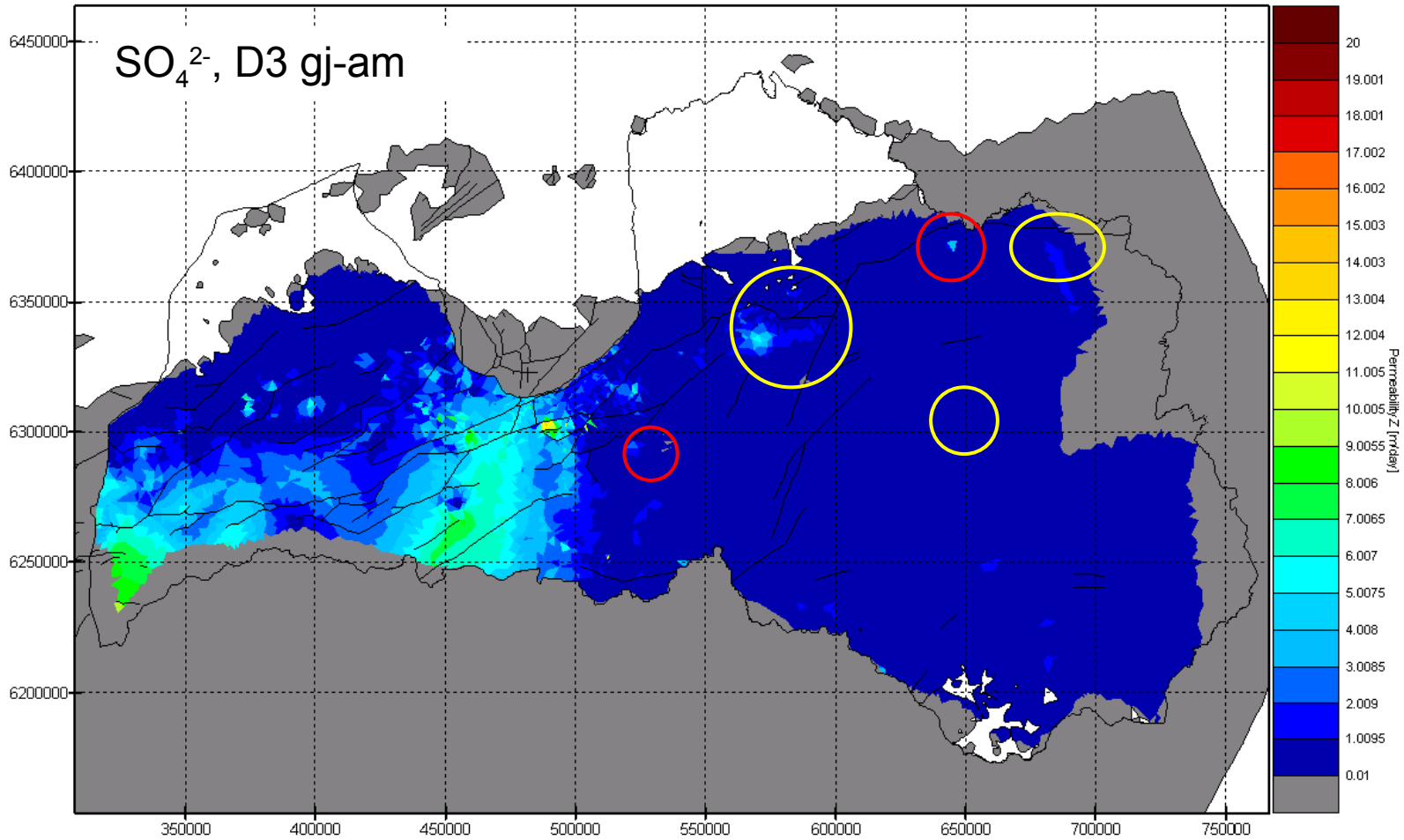
Gyps in D3 og-kt formations



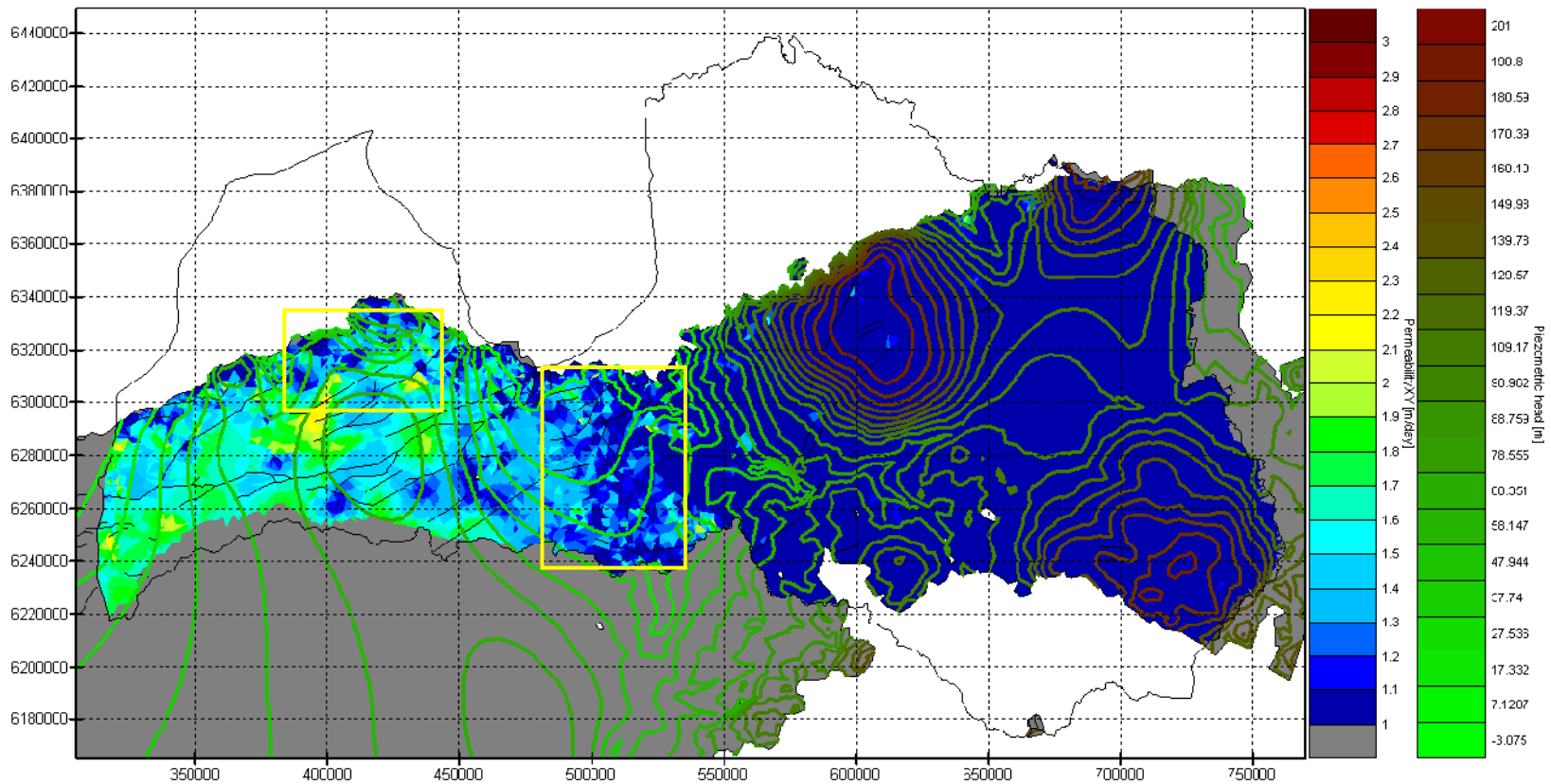
Gyps in D2 nr formation

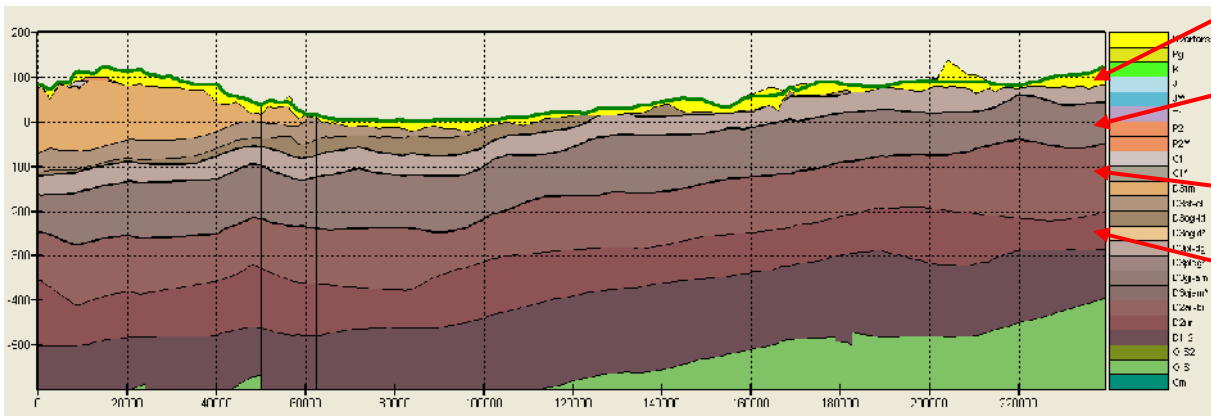


D3 pl-dg formations



The SO_4^{2-} in D_3 gj-am formations



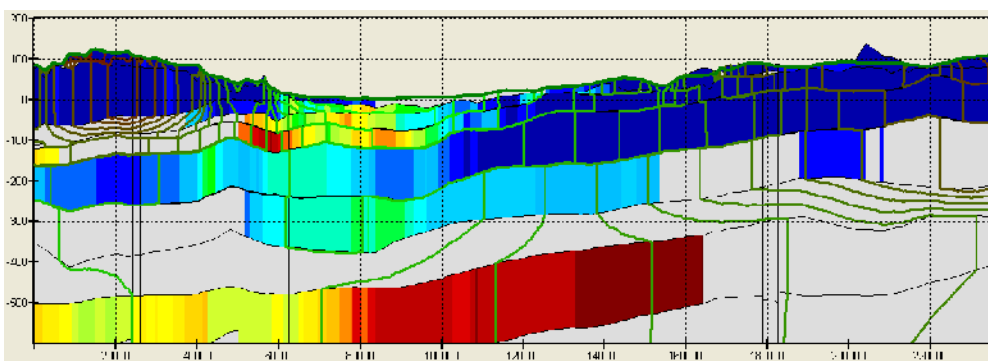
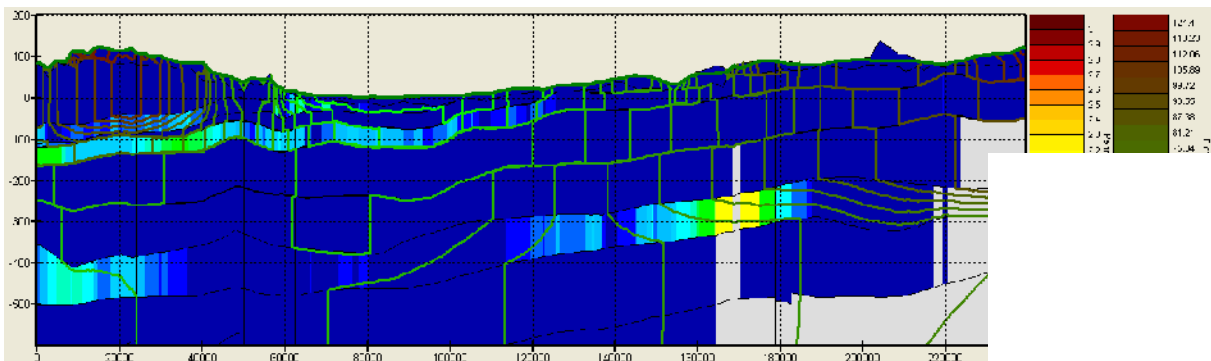


D3 pl-dg

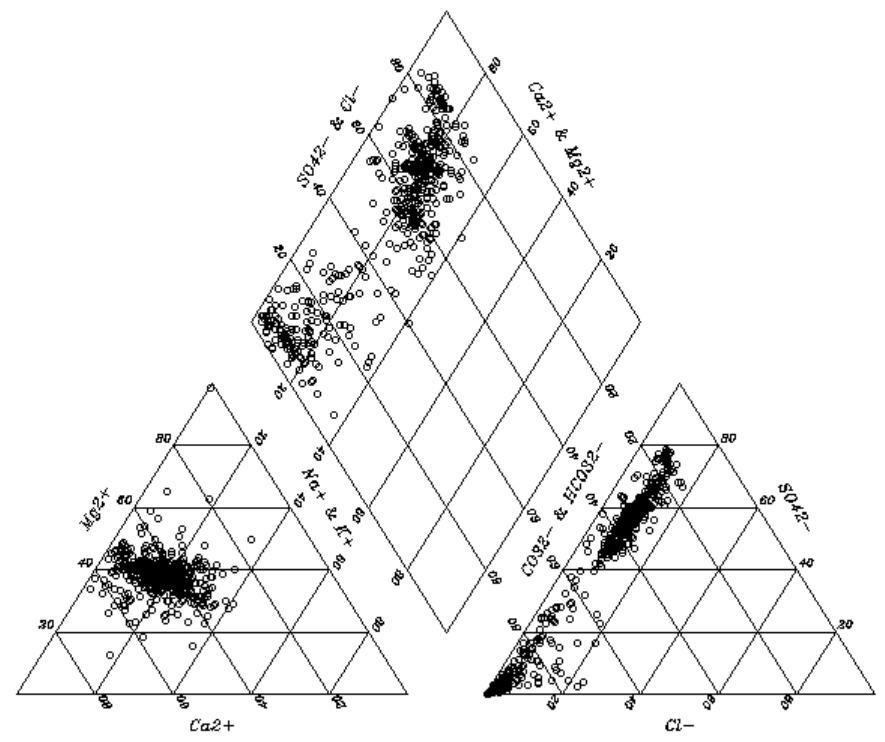
D3 gj-am

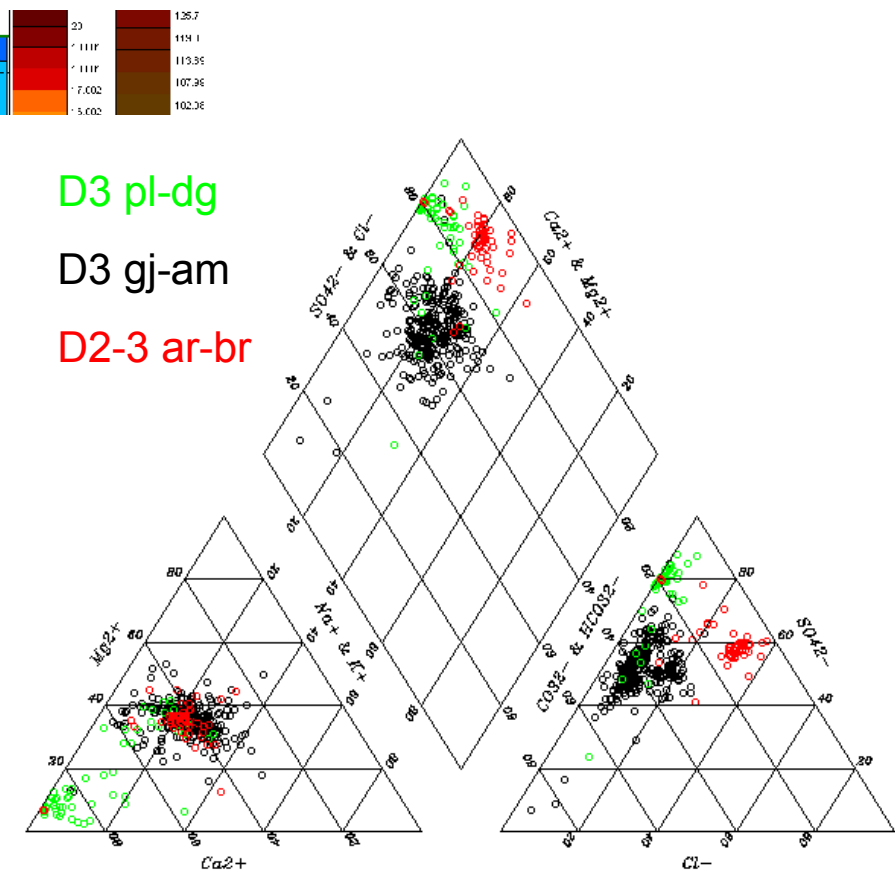
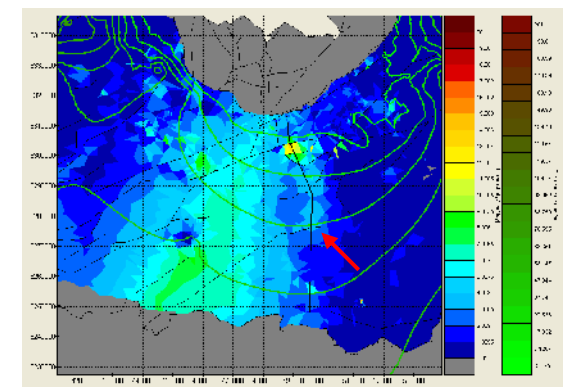
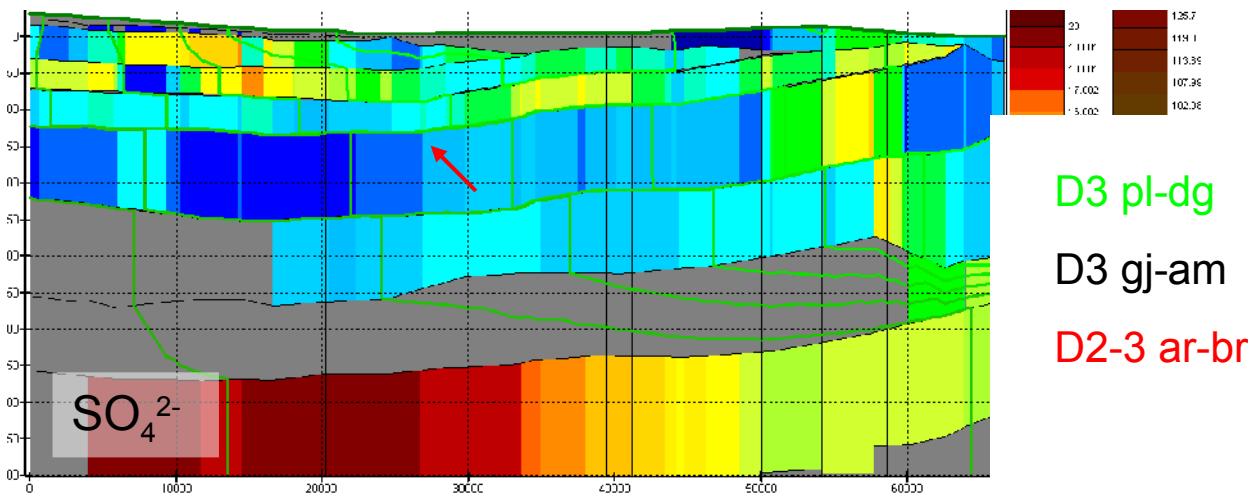
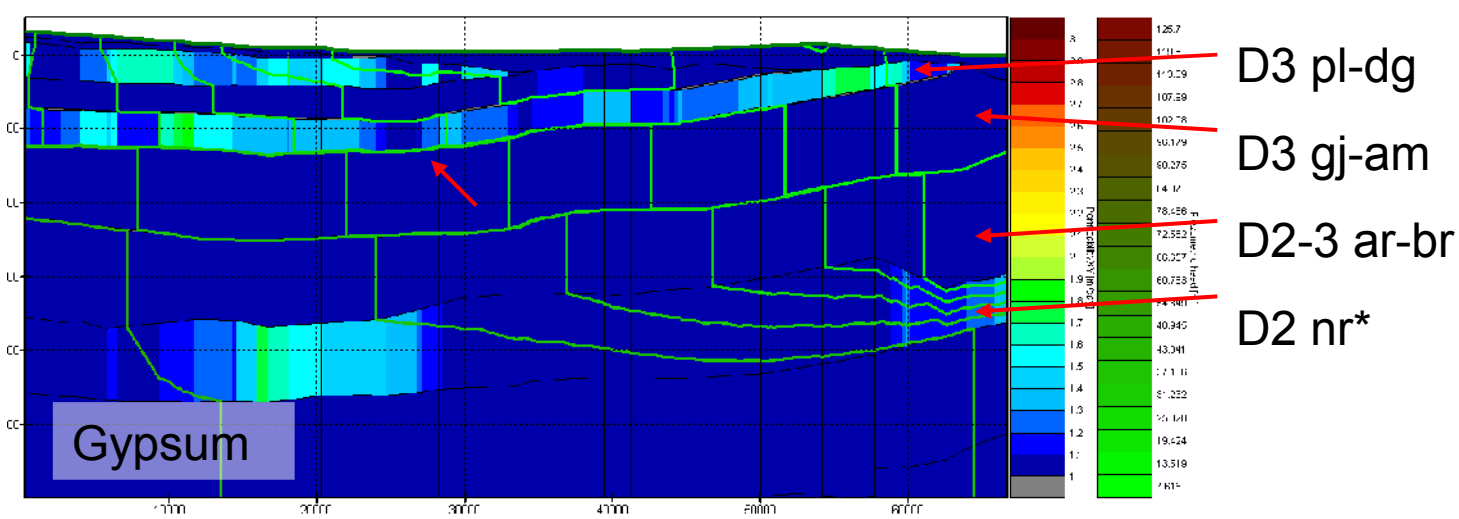
D2-3 ar-br

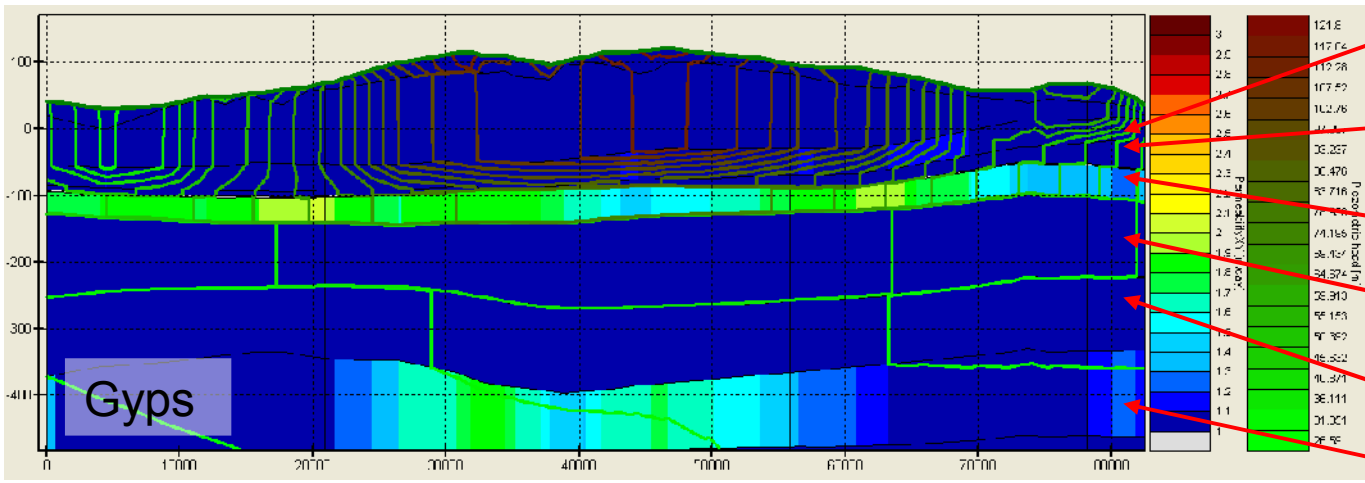
D2 nr*



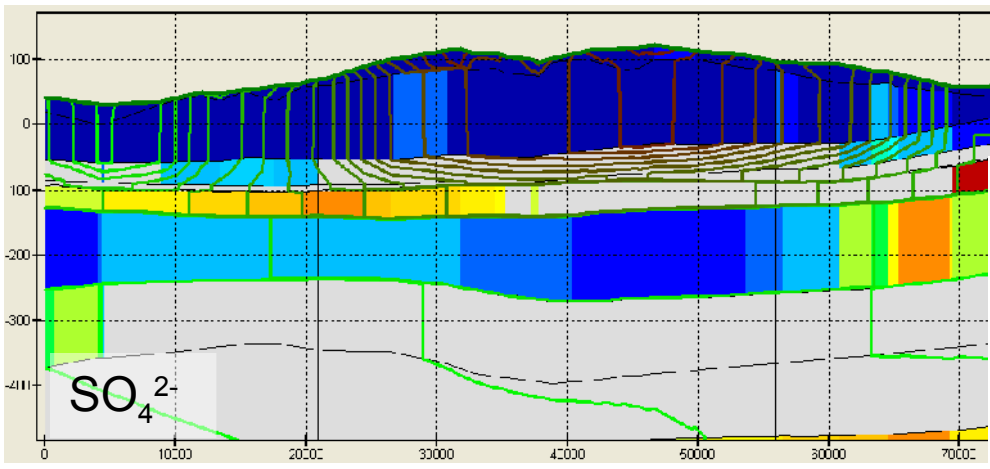
D3 gj-am



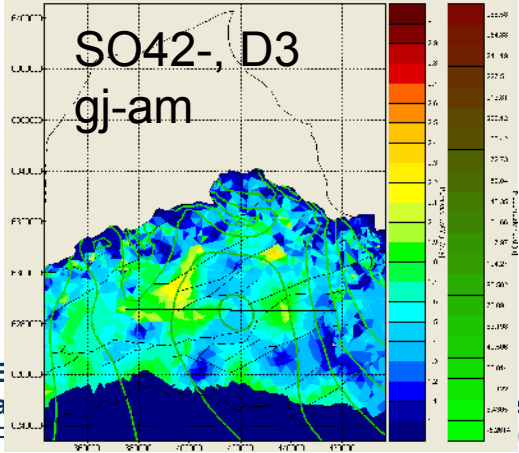




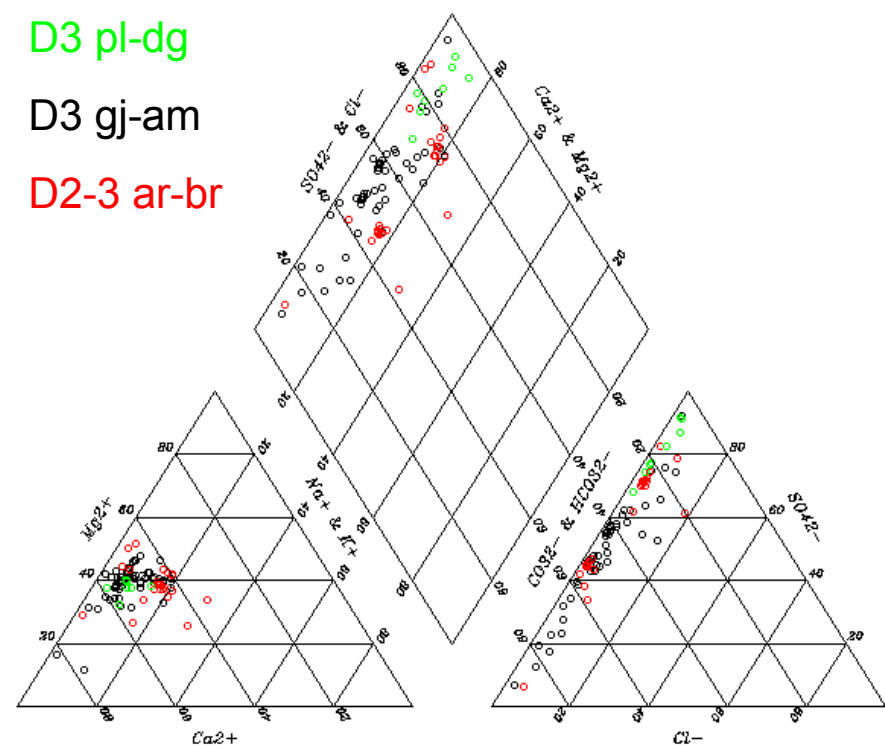
- D3st-el
- D3 og-kt
- D3 pl-dg
- D3 gj-am
- D2-3 ar-br
- D2 nr*



- D3 pl-dg
- D3 gj-am
- D2-3 ar-br



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So what?

- Generally the observed SO_4^{2-} concentration in the groundwater can be well explained by the V0 model
- There is some water that seems to be formed at a time when different flow pattern persisted
- Tracer tests with score counting could provide some interesting statistics



Thanks for Your attention!

