Methodology

Numerical 3D model (Feflow)

Model calibration with Pilot Points (PEST)

Backward particle tracking density

Results I

Model calibration

Results II

K distribution for the bedrock

Example: Backward particle tracking density

Conclusion

PT without Monte-Carlo \(\rightarrow\) not representing subsurface uncertainty and will always provide smaller well capture zones.

PT based on a single flow simulation \(\rightarrow\) can be used as initial screening tool, however, decisions should not be based on only one model realization.

Our pathline density distributions, following a simple post-processing step \(\rightarrow\) provide probability information maps beyond classical deterministic PT approaches.

Reference: