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## Generalizing the simulation of temperature distributions in a deep geological nuclear waste repository

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Based on representative data for the geologic situation in Germany the temperature evolution around a nuclear waste canister was modeled in detail. The surrounding rock data for this specific case study represent crystalline rock properties. Heat production was estimated based on the German radioactive waste inventory. Using FEFLOW a high-resolution 3D numerical thermal model of one single canister was set up. The respective canister design was selected according to the Scandinavian KBS-3V concept. Based on this model representative temperature data in space and time were computed. By using these detailed reference results a strongly simplified model with just single node heat sources representing a repository section with 15 emplaced canisters was calibrated.

Tests showed that this approach allows to compute large arrays of canisters with a good quality.

Results of the study will be shown and further potential improvements are discussed.