

## **Intercomparison between TRIO-EF and IMPACT codes with reference to experimental strontium migration data**

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This work presents an intercomparison exercise between two geochemical migration codes, TRIO-EF (an object-oriented finite element code) and IMPACT (a chemical engineering code using mixing cells in series). The predictions of the two codes are compared with the reference experimental results obtained in a previous study of strontium transport in soil columns. This simulated geochemical system is well documented and includes ion exchange and dissolution-precipitation reactions. The solution transport is simulated by a one-dimensional advection-dispersion model. The predictions of TRIO-EF and IMPACT are both in good agreement with the experimental results. However, slight differences can be observed between the two codes, especially when concentration discontinuities are involved, such as precipitation fronts or changes in boundary conditions. These discrepancies between the two codes can mainly be attributed to the different discretisation approaches.