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A simple embedded discrete fracture-matrix model for a coupled flow and transport problem in porous media

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Highlights

- A mixed-dimensional model, where fractures are modelled by lower-dimensional surfaces, for flow and transport in fractured porous media is considered.
- An embedded finite element method (EFEM) for flow is coupled to a low order finite volume method for transport with a novel approximation of the fracture-matrix coupling term.
- The coupled method allows for complex fracture geometry and easy meshing since fractures can cut elements arbitrarily.
- EFEM is applied to recent benchmark cases, and numerical examples demonstrate the capabilities of the coupled method on realistic problems.

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