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Practical applications of CO_2 flow modeling in commercial scale sequestration projects

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We review various challenges related to modeling of CO_2 flow through porous media, in the specific context of commercial scale sequestration projects of multiple millions of tons per year. Proper understanding and modeling of the physics of rock- CO_2 and rock-brine interactions have dramatic implications for CO_2 plume spread, and the final "fate" of the injected CO_2. We demonstrate the practical relevance of these concepts on specific geologic sites that are currently being developed for commercial scale sequestration in the United States.