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# Participatory modeling - engineering and social sciences in tandem

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The modeling of flow and transport processes in the context of engineering in the subsurface often takes place within a field of conflict from different interests, where societal issues are touched or involved. Carbon Capture and Storage, Fracking, or nuclear waste disposal are just a few prominent examples, where engineering (or: natural sciences) and social sciences have a common field of research. It is only consequent for both disciplines to explore methods and tools to achieve best possible mutual benefits.

Participatory modeling (PM) is such an idea, where so-called stakeholders can be involved during different phases of the modeling process. This can be accomplished by very different methods of participation and for different reasons (public acceptance, public awareness, transparency, improved understanding through collective learning, etc). Therefore, PM is a generic approach, open for different methods to be used in order to facilitate early expert and stakeholder integration in science development.

We have used PM recently in two examples, both in the context of Carbon Capture and Storage. The first one addressed the development and evaluation (by stakeholders) of a screening criterion for site selection. The second one deals with a regional-scale brine migration scenario where stakeholders have been involved in evaluating the general importance of brine migration, the design of a representative geological model for a case study and in the definition of scenarios to be simulated.

This contribution aims at summarizing our experiences and share it with the modeling community.

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