EFFICIENT SIMULATION TECHNOLOGY FOR MULTIPHYSICS IN COMPLEX POROUS MEDIA

TRACK NUMBER 1700

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Key words: Porous media, poromechanics, multi-physics, contact mechanics, iterative solvers, preconditioners

ABSTRACT

Many real world porous media applications are governed by multiphysics models formulated on complex geometries, introducing a range of spatial and temporal scales. For instance, fractured and faulted systems play a significant role in the modeling of geological carbon storage and geothermal energy, which are governed by porous media flow coupled to geomechanics taking into account contact. In addition, strong coupling between the different potentially highly nonlinear and non-smooth subproblems often arise. Both poses challenges to the development of accurate, efficient and robust simulation technology - on the other hand such are required. The focus of this minisymposium is to gather recent advances of simulation technology tailored to multiphysics problems and complex porous media as tailored block-partitioned solvers [1], tuning of solver parameters [2], field-scale simulations [3] and related topics.

REFERENCES

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