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ALTERNATING DIRECTIONS SOLVER FOR ISOGEOMETRIC SIMULATIONS OF NON-LINEAR PROBLEMS

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ABSTRACT

In this paper we present an application of Alternating Direction Solver (ADS) for solution of non-stationary PDE-s with isogeometric finite element method. We illustrate this approach by solving examplary non-stationary three-dimensional problemusing explicit Euler scheme. In particular we focus on the difficult problem of non-linear flow in heterogenous media.

KEYWORDS: Isogeometric Finite Element Method, Non-Stationary Problems, Alternating Direction Solver, Linear Computational Cost, Non-Linear Flow In Heterogenous Media