Iterative subdomain methods for the Stokes–Darcy problem

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In this talk different strategies to couple Stokes and Darcy equations using classical iterative subdomain methods are reviewed. In particular the case of small viscosity and hydraulic conductivity is considered. It is clarified, that standard algorithms based on the solution of subproblems with Neumann data on the common interface are inappropriate in such a case. Instead, Robin conditions on the interface prove to be more successful. These schemes lead to an efficient numerical method if the involved parameters are chosen appropriately.

REFRENCE

[1] A. Caiazzo, V. John, U. Wilbrandt, *On classical iterative subdomain methods for the Stokes–Darcy problem*, Comput. Geosci. 18 (5) (2014) 711728.