Global well-posedness for the one-phase Muskat problem

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Abstract

In this talk we discuss new techniques to construct global-in-time critical Muskat solutions. The Muskat problem models the evolution of an incompressible fluid filtered in porous media driven by gravity. We show that initial Lipschitz graphs of arbitrary size provide global-in-time well-posedness for the stable scenario. This is a joint work with Hongjie Dong (Brown University) and Huy Quang Nguyen (University of Maryland).

References

[1] H. Dong, F. Gancedo, and H.Q. Nguyen, *Global well-posedness for the one-phase Muskat problem*, **Comm. Pure Appl. Math.**, accepted (2021), preprint arXiv:2103.02656.