A dyadic model for non-Newtonian fluid equations

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We present a dyadic model for the equations for a non-Newtonian fluid introduced by Ladyzhenskaya. We prove a bound for the hausdorff dimension of the singular set at the first time of blow-up. The result interpolates between the solvability results of Ladyzhenskaya and the bound for the dimension of the singular set of Caffarelli, Kohn, and Nirenberg.

This is joint work with Natasa Pavlovic.