SIMION STOILOW INSTITUTE OF MATHEMATICS OF THE ROMANIAN ACADEMY

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Some general external forces and critical mild solutions for the fractional Navier-Stokes equations

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Abstract: In this article we study mild solutions for the forced, incompressible fractional Navier-Stokes equations. These solutions are classically obtained via a fixed-point argument which relies on suitable estimates for the initial data, the nonlinearity and the external forces. Many functional spaces can be considered, however we are mainly interested here in a critical setting (with respect to the structure of the equation) which ensures the existence of global mild solutions. We give some examples of such critical functional spaces and we discuss their relationship with generic external forces. This is a joint work with Maxence Mansais.