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SOME FACTS ABOUT ASYMPTOTIC BEHAVIOR FOR A HYPERVISCOUS FLUID

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Abstract. In this paper, we study the global in time solutions for a hyperviscous model of an incompressible fluid. These functions can be thought as approximated solutions of the Navier-Stokes system. We prove that the solutions of the perturbed model converge towards the solutions of the Navier-Stokes equations in L^p norm. Moreover, we show some properties of the asymptotic behavior for these solutions and also provide a decay rate for them.

Keywords. Incompressible Navier-Stokes system, large time asymptotic, hyperviscous fluids.

AMS (MOS) subject classification: 35Q35, 35Q30, 35K05.

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