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Inviscid limit for axisymmetric stratified Navier-Stokes system

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This paper is devoted to the study of the Cauchy problem for the stratified Navier-Stokes system in space dimension three. In the first part of the paper, we prove the existence of a unique global solution (v_ν,ρ_ν) for this system with axisymmetric initial data belonging to the Sobolev spaces $H^{s}\times H^{s-2}$ with $s>5/2.$ The bounds of the solution are uniform with respect to the viscosity. In the second part, we analyse the inviscid limit problem. We prove the strong convergence in the space $L^{\infty}_{\text{loc}}(\RR_+; H^{s}\times H^{s-2})$ of the viscous solutions $(v_\nu,\rho_\nu)_{\nu>0}$ to the solution (v,ρ) of the stratified Euler system.

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