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Optimal decay rate for strong solutions in critical spaces to the compressible Navier-Stokes equations. (English) [Zbl 1300.35080](#)

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Summary: In this paper we are concerned with the convergence rates of the global strong solution to motionless state with constant density for the compressible Navier-Stokes equations in the whole space \mathbb{R}^n for $n \geq 3$. It is proved that the perturbations decay in critical spaces, if the initial perturbations of density and velocity are small in $B_{2,1}^{\frac{n}{2}}(\mathbb{R}^n) \cap \dot{B}_{1,\infty}^0(\mathbb{R}^n)$ and $B_{2,1}^{\frac{n}{2}-1}(\mathbb{R}^n) \cap \dot{B}_{1,\infty}^0(\mathbb{R}^n)$, respectively.

MSC:

[35Q30](#) Navier-Stokes equations

[76N15](#) Gas dynamics, general

[35D35](#) Strong solutions to PDEs

[35B20](#) Perturbations in context of PDEs

Cited in 14 Documents

Keywords:

compressible Navier-Stokes equations; convergence rate

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