

Some insights in homogenization of compressible Navier-Stokes equations

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Abstract

We investigate the homogenization of the two- and three-dimensional unsteady compressible Navier-Stokes equations, and show (i) the convergence result for the 2D case, and (ii) a better lower bound for the adiabatic exponent occurring in the pressure law for the 3D case. The latter will be covered with two different proofs. Lastly, we briefly discuss the optimality of the achieved bounds for the adiabatic exponent in terms of the underlying space-time dimension. This is joint work with Šárka Nečasová (CAS) and Milan Pokorný (Charles University).