



The global existence of the smoothing solution for the Navier-Stokes equations

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This paper discussed the global existence of the smoothing solution for the Navier-Stokes equations. At first, we construct the theory of the linear equations which is about the unknown four variables functions with constant coefficients. Secondly, we use this theory to convert the Navier-Stokes equations into the simultaneous of the first order linear partial differential equations with constant coefficients and the quadratic equations. Thirdly, we use the Fourier transformation to convert the first order linear partial differential equations with constant coefficients into the linear equations, and we get the explicit general solution of it. At last, we convert the quadratic equations into the integral equations or the question to find the fixed-point of a continuous mapping. We use the theories about the Poisson's equation, the heat-conduct equation, the Schauder fixed-point theorem to prove that the fixed-point is exist, hence the smoothing solution for the Navier-Stokes equations is globally exist.

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