

On the partial regularity of suitable weak solutions: Pointwise estimates and space-time decay

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Abstract

Starting from the partial regularity results for suitable weak solutions to the Navier-Stokes Cauchy problem given by Caffarelli, Kohn and Nirenberg in [1], under suitable assumptions on the initial data we prove a behavior in time of the L_{loc}^∞ -norm of the solution in a neighborhood of $t = 0$. This result is also a main tool for developing the study of space-time pointwise estimates of a suitable weak solution in the exterior of a ball, corresponding to a given asymptotic behavior of the initial data of the same order of decay. The results are part of papers [2, 3].

Keywords: Navier-Stokes equations, suitable weak solutions, partial regularity, space-time estimates.

References

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