On Serrin type condition for the Navier-Stokes equations (NSE)- part 1.

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Abstract

First we prove existence of global regular solutions to weakly compressible Navier-Stokes equations (WCNS). Next by the perturbation argument we prove stability of solutions to NSE near solutions to WCNS. From these two steps we are able to derive the Serrin type condition guaranteeing regularity of solutions to NSE. The reason of this lecture is presentation and discussion.