A survey on Fourier analysis methods for compressible flows

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Since the 80's, Fourier analysis methods have known a growing importance in the study of linear and nonlinear PDE's. In particular, techniques based on Littlewood-Paley decomposition and paradifferential calculus have proved to be very efficient for solving such equations in the whole space or the torus.

In this talk, we aim at giving a survey of how those techniques may be used for solving the compressible Navier-Stokes equations, or related systems arising in fluid mechanics.