

## **Some Remarks on the Viscosity Limit Problem**

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Historically, the equations of ideal fluid dynamics written down by Euler in 1757 were among the first partial differential equations ever to be formulated. It took decades to develop a refinement of Euler's model -- the Navier-Stokes system -- where friction effects within the fluid are taken into consideration. Yet, close-to-ideal fluids remain of great interest, as they are likely to display effects of turbulence. It is therefore an important question whether, as viscosity tends to zero, the solutions of the corresponding Navier-Stokes equations converge to the, or a, solution of the Euler system. We will present recent insights into this question in various settings, including three-dimensional shear flows and peculiarities of the two-dimensional theory.