On the incompressible Euler equation

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The Euler equation is one of the oldest and most famous partial differential equations. Despite its compact and elegant form, the global wellposedness theory for the equation in three-dimension remains to be a very challenging problem. In this talk, I will discuss local and global regularity theories for the incompressible Euler equation, and related systems in fluid mechanics, including some recent development on possible singularity formations of the system.

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