ALBERTO ENCISO
Mathematical problems in fluid mechanics

The 3D incompressible Euler equation,

$$\partial_t u + (u \cdot \nabla)u = -\nabla p \,, \qquad \operatorname{div} u = 0 \,,$$

where the spatial variable takes values in $\mathbb{R}^3$ or $\mathbb{T}^3$, is one of the most important, least understood equations in mathematics. This project aims to explore several important mathematical topics related to the analysis of incompressible fluid flows.