Coxeter-James Prize
Prix Coxeter-James

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Threshold spaces for incompressible Euler equations

The incompressible Euler equations describe the flow of an inviscid, incompressible fluid and have very rich analytic and geometric structures. The pioneering work of Lichtenstein, Gunther in 1940s and Kato-Ponce in 1980s constructed solutions to the incompressible Euler equations in function spaces above a certain regularity threshold. The intensive research in the past several decades showed that the complexity of the threshold cases is deeply connected with the inherent nonlinear and non-local structures in the Euler equations. I will survey some recent developments on these problems.