
Appearance of turbulence in the Euler limit with Boundary effects.

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Abstract

It seems that it is in presence of boundary effects that the classical issues of turbulence ie loss of regularity, the appearance of a non trivial Reynolds stress tensor and anomalous energy dissipation are the more visible.

Up to know the only general result is a theorem of Kato which connect these different effect.

1 I intend to give some observation on these issues using first the notion of wild solution of De Lellis and Székelyhidi .

2 I want to underline the fact the equivalent criteria for the non convergence to a smooth solution, namely:

$$\epsilon = \lim_{\nu \rightarrow 0} \partial_{\bar{b}} u_{\tau} > 0$$

is the basic ingredient in the ansatz proposed by Prandtl and Von Karman for the turbulent layer.

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