Question: Why is the Reynolds Number for onest of turbulence given by...

Why is the Reynolds Number for onest of turbulence given by Re > 2000 in fully flowing pipes, and Re > 500 in partly flowing pipes and onther open channels?

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Best Answer

Anonymous answered this
714 answers

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Shear flows undergo a sudden transition from laminar to turbulent motion as the velocity increases, and the onset of turbulence radically changes transport efficiency and mixing properties. Even for the well-studied case of pipe flow, it has not been possible to determine at what Reynolds number the motion will be either persistently turbulent or ultimately laminar. We show that in pipes, turbulence that is transient at low Reynolds numbers becomes sustained at a distinct critical point. Through extensive experiments and computer simulations, we were able to identify and characterize the processes ultimately responsible for sustaining turbulence. In contrast to the classical Landau-Ruelle-Takens view that turbulence arises from an increase in the temporal complexity of fluid motion, here, spatial proliferation of chaotic domains is the decisive process and intrinsic to the nature of fluid turbulence.

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Oracle3344 answered this
2,296 answers

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This explanation should help you!!! Cheers!!!

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cooljames answered this
6,028 answers

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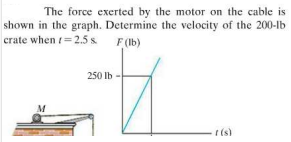
The Force exerted by the motor on the cable is shown in the graph.



See answer

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Q: Why is the Reynold's Number for onset of turbulance given by Re>2000 in fully flowing pipes and Re>500 in partly flowing pipes and other open channels?

A: See answer

Q: A rectangular open channel has a base length of 2b, and the water is flowing with a depth of b. a) Sketch this channel. b) What is the hydraulic radius of this channel?

A: See answer 100% (2 ratings)

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