PONTIFÍCIA UNIVERSIDADE CATÓLICA DO RIO DE JANEIRO
Departamento de Engenharia Mecânica

Short Course Announcement

Flow Transition and Turbulence - Physical Nature

Lecturer: **Yury S. Kachanov**
Dates: 15-19 September 2014
Hours: 9:00-12:00hs
Local: To be defined...

Short Vitae of the Lecturer:
http://www.uta.edu/math/courses/FTT09/vita_Kachanov.pdf

Monday, September 15, 2014

09:00 -10:20 am	Turbulence origin and its practical significance. Transition scenarios and shear-flow instabilities
10:20 – 10:40 am	Break
10:40 - 12:00 pm	Recent achievements in investigations of 3D instabilities of 2D and 3D boundary layers.

Tuesday, September 16, 2014

09:00 -10:20 am	Most important mechanisms of localized and distributed boundary-layer receptivity to external disturbances
10:20 – 10:40 am	Break
10:40 - 12:00 pm	Localized and distributed excitation of TS-waves and Cross-flow modes by acoustic waves, surface non-uniformities, and free-stream vortices.

Wednesday, September 17, 2014

09:00 -10:20 am	Main features of weakly-nonlinear stages of transition. Predominant role of resonances.
10:20 – 10:40 am	Break
10:40 - 12:00 pm	Vortical structures and events observed at late stages of transition

Thursday, September 18, 2014

09:00 -10:20 am	Universality of essentially nonlinear mechanisms of turbulence production in transitional and turbulent wall-bounded shear flows
10:20 – 10:40 am	Break
10:40 - 12:00 pm	Deterministic turbulence – the modern advanced approach in turbulence research

Friday, September 19, 2014

09:00 -10:20 am	Transition prediction approaches and their peculiarities.
10:20 – 10:40 am	Break
10:40 - 12:00 pm	Control of transitional and turbulent boundary layers. Efficient application of the deterministic turbulence method