

# Boulder Fluid and Thermal Sciences Seminar Series



Monday, February 17, 2020

3:00pm-4:00pm (refreshments at 2:45pm)

Bechtel Collaboratory 1B70, Discovery Learning Center  
University of Colorado Boulder

## J. Christos Vassilicos

*CNRS Director of Research*

*Laboratoire de Mecanique des Fluides de Lille, France*

## Interscale Turbulent Energy Transfers

The Turbulent energy transfers are studied concurrently in physical and scale spaces in terms of the fully generalised Karman-Howarth equation which is valid without any restriction as it is just a two-point reformulation of the incompressible Navier-Stokes equations. Direct Numerical Simulations of two turbulent flows are considered: triply periodic turbulence, which serves to demonstrate significant correlations between different fluctuating transfer processes, and the planar turbulent near wake where a balance between interscale transfer rate and turbulence dissipation exists which has nothing to do with its Kolmogorov counterpart for homogeneous stationary turbulence and a lot to do with inhomogeneity and the presence of coherent structures.

