**Subcritical Transition in Channel Flows** JOSEPH MAESTRI,
PHILIP HALL, Imperial College London — Exact-coherent structures, or collo-
quially non-linear solutions to the Navier-Stokes equations, have been the subject
of great interest over the past decade due to their relevance in understanding the
process of transition to turbulence in shear flows. Over the past few years the re-
lationship between high Reynolds number vortex-wave interaction theory and such
states has been elucidated in a number of papers and has provided a solid asymptotic
framework to understand the so-called self-sustaining process that maintains such
structures. In this talk, we will discuss this relationship before talking about recent
work on solving the vortex-wave interaction equations using numerical techniques
in order to propose laminar-flow control techniques.

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