



## NORDITA Workshop on Turbulent Boundary Layers

April 29-30, 2010  
NORDITA &  
Linné FLOW Centre, KTH Mechanics  
KTH Royal Institute of Technology  
Stockholm, Sweden



<http://www.flow.kth.se/nordita2010>

### Scope:

Turbulent boundary layers, appearing on solid surfaces of bodies submerged in fluids are among the canonical, wall-bounded, turbulent flows together with channel and pipe flows that have been the focus of experimental and analytical investigations for almost a century. The relevance of a thorough theoretical and practical understanding cannot be overestimated for industrial application in engineering and aeronautical application.

Still there are several unresolved issues even related to fairly basic mechanisms, such as the variation of turbulent stresses with Reynolds number, scaling of spectra, the differences (if any) between confined flows (channel and pipe) and open boundary layer flows, the interaction between outer and inner region, the properties of small-scale turbulence near the dissipation range etc. Recent accurate experimental studies, but also direct numerical simulations (DNS) together with innovative theoretical studies have made it possible to further penetrate the details of such flows.

At NORDITA, during April 2010 a research programme is held with about 40 invited international researchers to discuss and analyze recent progress; this workshop will be held as a final activity within the NORDITA programme.

More Information: <http://agenda.albanova.se/conferenceDisplay.py?confId=573>

### Invited Participants:

The participants of the NORDITA programme during April 2010 are encouraged to present their latest research results at the workshop, including results being discussed during the programme. An estimated number of 50 scientists is expected to attend the workshop. Confirmed participants include:

**Hiroyuki Abe**, JAXA, Japan

**Masaharu Matsubara**, Shinshu University, Japan

**Henrik Alfredsson**, KTH Mechanics, Stockholm, Sweden

**Beverley McKeon**, Caltech, Pasadena, U.S.A.

**Carlo Casciola**, University of Rome, Italy

**Jonathan Morrison**, Imperial College, London, U.K.

**Carlo Cossu**, CNRS, Toulouse, France

**Hassan Nagib**, IIT Chicago, U.S.A.

**Javier Jiménez**, Universidad Politécnica, Madrid, Spain

**Martin Oberlack**, Technische Universität Darmstadt, Germany

**Per-Åge Krogstad**, NTNU Trondheim, Norway

**Neil Sandham**, University of Southampton, U.K.

**Yvan Maciel**, Laval University, Canada

**Yoshiyuki Tsuji**, Nagoya University, Japan

**Ivan Marusic**, University of Melbourne, Australia

**Xiaohua Wu**, Royal Military College, Kingston, Canada

### Topics:

The workshop will cover all the topics included in the NORDITA programme including aspects as diverse as:

- Comparison DNS and experiments
- New analysis methods of data (experiments and simulation)
- Visualisation, feature extraction, coherency
- Near-wall dynamics, cycle, dominant structures, hairpins
- Applicability of LES to high-Re boundary layers, filtering, modelling
- Linear amplification based on mean profiles
- Additional physics: pulsation, rotation, stratification, MHD, *etc.*

### Location & Outline:

Seminars will be given April 29 and 30, 2010 at Albanova, about 10 minutes from the KTH main campus, located close to the city centre of Stockholm, Sweden. Complementary activities and lunches will be provided and communicated in due time.

### Registration & Contact:

The workshop is by invitation only, *i.e.* participation needs to be confirmed by the organisers. The workshop is free of charge; however, travel and accommodation is up to the participants. If you are interested to participate, or have other questions, please contact

**Dr. Philipp Schlatter**

Co-organiser NORDITA Programme

KTH Mechanics, SE-100 44 Stockholm, Sweden, [pschlatt@mech.kth.se](mailto:pschlatt@mech.kth.se)