

# Fourth International Workshop on Wall-Bounded Turbulent Flows

Ettore Majorano Foundation and Center for Scientific Culture  
(EMFCSC)

Erice, Italy, Sep. 30 - Oct. 3, 2006

“Long” talks are 20 minutes with 15 minutes of discussion  
(time slot indicated with underline)

“Short” talks are 15 minutes with 10 minutes discussion

## Friday, September 29

Accommodation available at EMFCSC

## Saturday, September 30

Registration	13:00-15:00
Welcome and Announcements: Lex Smits	15:00-15:10
Summary and re-cap of previous workshops (K.R. Sreenivasan)	<u>15:10-15:40</u>

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### **Session 1: Structure and Scaling** **15:40-18:45** **(Co-Chairs: Ivan Marusic, Michael Schultz)**

Hassan Nagib & Kapil Chauhan, IIT Chicago, & Peter Monkewitz, EPFL 15:40-16:25  
*Complete representation of boundary layer properties*

Joe Klewicki, University of New Hampshire 16:25-16:50  
*On scaling the mean momentum balance and its solutions*

**Coffee Break** 16:50-17:20

Martin Oberlack, TU Darmstadt 17:20-17:45  
*Reynolds number dependent near wall scaling laws from approximate symmetries*

Nicholas Hutchins, University of Melbourne 17:45-18:10  
*Large-scale influences in near-wall turbulence*

Peter Davidson, University of Cambridge 18:10-18:45  
*A refined interpretation of the logarithmic structure function law*

**Reception** 19:15-20:45

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## Sunday, October 1

**Session 2:** **09:00-12:35**  
**(Co-Chairs: Hassan Nagib, Martin Oberlack)**

Lex Smits, Princeton University 09:00-09:25  
*Experiments on rough pipes and submarine wakes at high Reynolds number*

Jason Monty, University of Melbourne 09:25-09:50  
*Turbulent pipe flow development*

Alessandro Talamelli, Universita di Bologna 09:50-10:25  
*Status and developments of the CICLoPE project*

**Coffee Break** 10:25-10:55

Paolo Gualtieri, Carlo Massimo Casciola, and Renzo Piva 10:55-11:20  
Universita di Roma "La Sapienza"  
*DNS, LES and resolution issues for the experiments in CICLoPE*

Boris Jacob, Elisabetta De Angelis, Renzo Piva, 11:20-11:45  
Universita di Roma "La Sapienza"  
*The dynamics of wall turbulence in drag reducing flows*

Henrik Alfredsson, KTH Stockholm 11:45-12:10  
*The effects of symmetry breaking on axially rotating pipe flow*

Ron Panton, University of Texas at Austin 12:10-12:35  
*Streamwise Reynolds stress correlated as active and inactive components*

**Lunch** 12:35

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## Monday, October 2

**Session 3:** **08:25-12:25**  
**(Co-Chairs: Lex Smits, Tim Nickels)**

Per-Åge Krogstad, NTNU Trondheim 08:25-9:00  
*Response of a boundary layer to a step change in surface roughness*

Mike Schultz and Karen Flack, U.S. Naval Academy 09:00-09:35  
*Roughness effects on turbulent boundary layers*

Meredith Metzger, University of Utah 09:35-10:00  
*Spectral characteristics of the near-neutral atmospheric surface layer*

Ivan Marusic, University of Minnesota 10:00-10:25  
*Lessons from six years in the desert*

**Coffee Break** 10:25-10:55

Bharathram Ganapathisubramani, University of Texas at Austin 10:55-11:20  
*Effects of upstream turbulent boundary layer on the unsteadiness of shock induced separation*

Pino Martin, Princeton University 11:20-11:45  
*DNS of supersonic and hypersonic turbulent wall-bounded flows*

Jean-Paul Dussauge, IUSTI Marseille <i>Oblique shock reflection on a flat plate: unsteadiness of the interaction</i>	11:45-12:10
Yvan Maciel, Laval University <i>Scaling and self-similarity in the outer region of turbulent boundary layers</i>	12:10-12:35
<b>Lunch</b>	12:35-14:15
<b>Session 4: (Co-Chairs: Karen Flack, Chris White)</b>	<b>14:15-17:15</b>
Javier Jiménez, Universidad Politecnica, Madrid <i>Pressure effects on wall-bounded turbulence</i>	<u>14:15-14:50</u>
Jens Fransson, KTH Stockholm <i>Pressure statistics in high Reynolds number turbulent boundary layer, Part II</i>	14:50-15:15
Yoshiyuki Tsuji, Nagoya University <i>Scaling of pressure and acceleration in high-Reynolds number shear flow</i>	15:15-15:40
<b>Coffee Break</b>	15:40-16:00
Jerry Westerweel, TU Delft <i>Finite lifetime of turbulence in shear flows</i>	16:00-16:25
K.R. Sreenivasan, ICTP <i>Polymer drag reduction effects</i>	16:25-16:50
Garry Brown, Princeton University <i>Physical aspects of the structure and Reynolds stress in near-wall turbulent channel flow</i>	16:50-17:15
<b>Reception</b>	18:00-19:30

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### **Tuesday, October 3**

**(Co-Chairs: K. R. Sreenivasan, Javier Jimenez)**

<b>Session 5: Summary and Future Directions</b>	<b>09:00-12:15</b>
Session 1 Summary and Discussion	09:00-09:30
Session 2 Summary and Discussion	09:30-10:00
Session 3 Summary and Discussion	10:00-10:30
<b>Coffee Break</b>	10:30-11:00
Session 4 Summary and Discussion	11:00-11:30
Discussion, Future Directions	11:30-12:00
Closing remarks	12:00-12:15
<b>Adjourn Workshop</b>	<b>12:15</b>