LILLE TURBULENCE PROGRAM 2022
Opening workshop on Turbulence
20-23 June 2022

Session I: Non-equilibrium and/or non-homogeneous turbulence
20-21 June 2022

DAY 1, Monday 20 June 2022: Turbulence near boundaries

9:15-10:00: Adrian Lozano-Duran (MIT, USA) "Self-similar response of non-equilibrium wall turbulence".

10:00-10:45: Nicolas Renard (ONERA, France) "Physical analysis and advanced simulation of non-equilibrium high-Reynolds-number spatially developing wall-bounded flows."

10:45-11:15: Coffe break for informal discussions

11:15-12:00: Yongyun Hwang (Imperial College London, UK) "Multiscale dynamics of near-wall turbulence"

12:00-14:00: Break for discussions and lunch

14:00-14:45: Jim Brasseur (University of Colorado Boulder, USA) "The role of the law of the wall and roughness scale in the surface stress model for LES of the rough wall".

14:45-15:30: Thomas Huret (LMFL, Lille, France) "Prediction of turbulence produced by non-homogeneous grids for applications to atmospheric boundary layer experimental generation".

15:30-16:15: Argyris Apostolidis (LMFL, Lille, France) "Interscale energy transfers in turbulent channel flow"

16:15-: Tea break and discussions

DAY 2, Tuesday 21 June 2022: Turbulence away from boundaries

9:15-10:00: Kostas Steiros (Imperial College London, UK) "Non-equilibrium decay of homogeneous turbulence"

10:00-10:45: Marcello Meldi (LMFL, Lille, France) "Is Kolmogorov's equilibrium limited to scales around and scaling with the Taylor micro-scale"

10:45-11:15: Coffe break for informal discussions

11:15-12:00: Luminita Danaila (M2C, Rouen, France) "Scalar statistics at interfaces"

12:00-14:00: Break for discussions and lunch

14:00-14:45: Remi Zamansky (IMFT, Toulouse, France) "Acceleration scaling and stochastic dynamics of a fluid particle in turbulence".

14:45-15:30: Felipe Alves Portela (LMFL, Lille, France) "Non-homogeneity in the turbulence cascade"

15:30-17:00: Long tea break and discussions

17:00-17:45: Sutanu Sarkar (UC San Diego, USA) "Anomalous scaling laws of slender-body wakes"

Session II: Satistical physics approaches to the turbulence cascade
22-23 June 2022

DAY 3, Wednesday 22 June 2022: Intermittency: multipoint analysis and Fokker-Planck for turbulence

9:15-10:00: Joachim Peinke (ForWind Oldenburg, Germany) "Empirical approach for a three-point closure by a Markov process".

10:00-10:15: Coffee break for informal discussions

10:15-10:45: Jan Friedrich (ForWind Oldenburg, Germany) "Explicit construction of joint multipoint statistics and superstatistical random fields in turbulence"

10:45-11:15: Coffee break for informal discussions

11:15-12:00: André Fuchs (ForWind Oldenburg, Germany) "Open source package Part I: basic turbulence characterization"

12:00-14:00: Break for discussions and lunch

14:00-: André Fuchs (ForWind Oldenburg, Germany) "Data analysis (Open source package Part I: basic turbulence characterization)".

Turbulence data are analyzed using the open-source Matlab package. A set of data from different turbulence experiments will be provided, but data of participants can also be analyzed. Furthermore, modifications of the package based on discussions during the workshop can be considered.

DAY 4, Thursday 23 June 2022: Integral Fluctuation Theorem, Entropy, Instantons

9:15-9:45: Matthias Wächter (ForWind Oldenburg, Germany) "The entropy of turbulent cascade trajectories: IFT & consequences".

9:45-10:00: Coffee break for informal discussions

10:00-10:30: André Fuchs (ForWind Oldenburg, Germany) "Open source package Part II: advanced turbulence characterization"

10:30-10:45: Coffee break for informal discussions

10:45-11:15: Joran Rolland (LMFL, Lille, France) "Large deviations for the study of intermittency in turbulent flows"

11:15-12:00: Oliver Kamps (WWU Muenster, Germany) "Inferring deterministic and stochastic dynamical models from data - from wake flows to turbulent cascades".

12:00-14:00: Break for discussions and lunch

14:00-: André Fuchs (ForWind Oldenburg, Germany) "Data analysis (Open source package Part II: advanced turbulence characterization)".

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