

UK Turbulence Consortium
Annual Review 2026
26th/27th March 2026
South hall, Pollock Estate

Thursday 26th March

09.00-10.00 Arrival, Refreshments

10.00-10.30 Welcome / Announcements (Sylvain Laizet)

10.30-12.30 Session 1 (Chair: Umair Ahmed)

10.30: Amirreza Rouhi: Application of riblets to separating turbulent boundary layers

10.45: Francesco Fico: Dynamics of wall-bounded magnetoconvective turbulence

11.00: Joseph O'Connor: A large-scale DNS dataset of the viscous sublayer up to $Re\theta = 2400$: collection, processing, and storage for efficient public remote access

11.15: Ximeng Kang: Flow in canyon arrays and its interaction with the atmospheric boundary layer under varying stability

11.30: Geveen Arumapperuma: Modelling Pollutant Formation in LES of Turbulent Non-Premixed Flames Using Convolutional Neural Networks

11.45: Yazhou Shen: Predicting Thermoacoustic Instability in a Swirl-Stabilised Ammonia-Hydrogen Combustor

12.00: Sofiane Al Kassar: Turbulent hydrogen premixed flames at high pressure and high temperature

12.15: Weiyue Liu: Large Eddy Simulation of Turbulent High-pressure Non-premixed $NH_3/H_2/N_2$ Flames Using Stochastic Fields

12.30-13.30 Lunch

13.30-15.00 Session 2 (Chair: Sylvain Laizet)

13.30: Chris Stafford: Uncertainty in compressible turbulence

13.45: Dominic Lee: Extracting Physical Mechanisms from High Fidelity Simulations

14.00: Adam Hanlon: Anisotropic Strain Applied to the Richtmyer-Meshkov Instability

14.15: Nick Williams: Unstable magnetic reconnection self-generates turbulence

14.30: Moritz Linkmann: Multistability and pattern formation in liquid metal magnetoconvection

14.45: Andrew Mole: Fluid Structure Interaction for Wind Farm Optimisation

15.00-15:45 UKTC-Interact posters

1-min flash presentations for each poster + discussions

1-Junjie Ye: An Implicit High-Order Sliding-Mesh Solver for Compressible Flow

2-Charles Moulinec: Moving 2decomp&fft from Fortran to C++

3-Omar Al-Abri: Sensitivity analysis of WMLES for T-junction mixing: effects of wall-normal sampling height and advection schemes

4-Stefano Rolfo: Assessing low frequency oscillations in the cooling channels of Target Station 2 of the ISIS Neutron and Muon Source

- 5-Roman Klopsch: Accelerating reinforcement learning for wind farm adaptive wake steering via steady-state priors
- 6-Archie Dobson: Smoothing Out The Wrinkles in Aerodynamic Design
- 7-Ross Cockcroft: Bayesian Approaches to Aerodynamic Model Correction in Actuator-Based Wind Turbine Models
- 8-Sean Malkeson: Analysis of Turbulence in Open Channel Flows using Direct Numerical Simulations (DNS)
- 9-Dao Zhou: Data-driven Modelling of Nonlinear Dynamics of Noise Generation by A Mixing Layer
- 10-Harry Dunn: Direct Numerical Simulation of Spanwise Effects in Vertical-Axis Wind Turbines Using High-Order Spectral/hp Element Methods
- 11-Boyang Xia: An efficient matrix-free DG solver using unstructured spectral element discretisation for incompressible turbulent flow
- 12-Ishaan Alidina: Towards Investigating the Potential of AMD FPGAs for Sustainable GEMM Operations in CFD
- 13-Dhrubajyoti Kashyap: Adaptive Lattice Boltzmann LES of Turbulent Channel Flow through a Porous Block
- 14-Nathan Boachie: Computational modelling of weak shockwave-gas bubble interactions in a liquid
- 15-Rabia Abid: CFD Prediction of Thermal comfort and upper room UVC air purification
- 16-Gokul Menon: Performance-Portable Parallelisation of an unstructured CFD solver for computational aeroacoustics with domain-specific language

15.45-16.15 Refreshments

16.15-17.15 Invited talk: Mark Parsons (EPCC): “The Next National Supercomputer: the world has changed”

17.15-18.00 Panel discussion: future of funding for the turbulence community with Spencer Sherwin (Imperial College), Ignazio Maria Viola (University of Edinburgh), Saleh Rezaeiravesh (University of Manchester)

18.45 Drinks Reception and Dinner (Playfair library)

Friday 27th March

09.00-10.30 session 4 (chair: Stefano Rolfo)

- 09.00: Wei Wang & Bo Liu: HPC Performance Analysis and GPU Porting of CHAPSim for Turbulence and Heat Transfer Simulations
- 09.15: Valantis Tsinginos: OPS-Particle: A domain specific language framework for modeling fluid-particle systems and beyond
- 09.30: Jundi He: Development of a turbulence generator based on improved synthetic eddy method (iSEM) and volumetric source term
- 09.45: Irufan Ahmed: Modernising data stewardship for the exascale era
- 10.00: Mikhail Glazunov: Multi-fidelity Surrogates for Tensorial Quantities in Fluid Dynamics
- 10.15: Aan Yudianto: Development of a Multi-Fidelity Data-Driven Shape Optimisation Framework for Drag Reduction over a Wall-Mounted Hemisphere

10.30-11.00 Refreshments

11.00-11.30 William Lucas (EPCC): ARCHER2 Service Update

11.30-13.00 Session 5 (chair: Marta Camps Santasmas)

11.30: Luca Boscagli: **On the role of turbulent fluid dynamics on contrail formation**

11.45: Ioannis Kyritsopoulos: **Evaluation of hybrid RANS/LES switching functions for natural convection: a study of turbulent transition**

12.00: Liming Yin: **Numerical study of turbulent separation and reattachment through circular holes with bias flow**

12.15: Olaf Marxen: **Laminar-turbulent transition in rotating disc cavities**

12.30: Oliver Jagger: **Non-equilibrium boundary layers on fan blades**

12.45: Shiyu Lyu: **Active Control of Subsonic Jet Aeroacoustics using Hybrid RANS/LES**

13.00-14.00 Lunch

14.00-15.15 Session 5 (chair: Neil Sandham)

14.00: Jiayi Gong: **Spectral/hp Large Eddy Simulation of Transonic Buffet with Inflow Turbulence**

14.15: Guglielmo Vivarelli: **A High-Fidelity Study of a High Pressure Turbine using the Open-Source Spectral/hp Element Solver Nektar++**

14.30: Raahil Sanjay Nayak: **Receptivity of Hypersonic Boundary Layers to Transpiration Cooling**

14.45: Max Walker: **Direct Numerical Simulation of Hypersonic Flow over a Three-Dimensional Bump**

15.00: Yabin Liu: **On the Origin and Passive Control of Self-Excited Unsteadiness in Tip Leakage Flow**

15.15: Adriano Cerminara: **Shock receptivity and hypersonic boundary-layer transition mechanisms**

15.30-16.00 Close and Awards (Sylvain Laizet)