

**3rd International EULAG Workshop on Eulerian/Lagrangian methods for fluids.  
25-28 June, 2012, Loughborough UK  
Preliminary Program**

**Monday, 25 June 2012**

Registration opens at 09:00

09:00 - 10:20 Tea & Coffee

10:20 - 10:30 J. Szmelter: Welcome

10:30 - 11:00 **EULAG-MHD: Simulation of the Global Solar Dynamo**

*Paul Charbonneau and Piotr Smolarkiewicz*

11:00 - 11:30 **En route wake vortex dynamics; a computational study**

*A.A. Wyszogrodzki, P.K. Smolarkiewicz and R. Sharman*

11:30 - 11:45 Tea & Coffee

11:45 - 12:15 **Modelling atmospheric flows on 3D hybrid unstructured meshes using high-order methods**

*Panagiotis Tsoutsanis, Dimitris Drikakis, and Jos Lelieveld*

12:15 - 12:45 **Numerical analyses of explicit time-stepping methods for use in atmospheric forecasting models**

*Sarah-Jane Lock*

12:45 - 14:15 Lunch Break

14:15 - 14:45 **A Volume-Preserving Semi-Lagrangian Trajectory Scheme**

*Jean-Francois Cossette and Piotr K. Smolarkiewicz*

14:45 - 15:15 **Slide lines in Lagrangian hydrocodes**

*Raphael Loubere Richard Liska, Milan Kucharik, Lubos Bednarik*

15:15 - 15:30 Short break

15:30 - 16:00 **Flux-Form Upstream Eulerian Schemes as a reconstruction operator for a conservative non-oscillatory semi-Lagrangian scheme.**

*Sylvie Malardel*

16:00 - 16:30 **Interface-Aware Sub-Scale Dynamics Closure Model**

*Andrew Barlow, Ryan N. Hill, Mikhail Shashkov*

**Tuesday, 26 June 2012**

09:00 - 9:30 **Calculation of surface fluxes – a proposed formulation for EULAG**

*Lech Lobocki*

09:30 - 10:00 **Dispersion of Passive Scalars in the Aare Valley**

*Irina Heese, Andreas Dörnbrack, Heini Wernli*

10:00 - 10:30 **EULAG simulations of orographic banner clouds**

*M. Voigt and V. Wirth*

10:30 - 10:45 Tea & Coffee

10:45 - 11:15 **West African Extreme Daily Precipitation in Observations and Stretched-Grid Simulations by CAM-EULAG**

*William J. Gutowski, Jr., Abayomi A. Abatan, Babatunde J. Abiodun, Joseph M. Prusa*

11:15 - 11:45 **Impact of heterogeneous nucleation on cirrus clouds in high-velocity regimes**

*P. Spichtinger, H. Joos, F. Fusina, P. Reutter*

11:45 - 12:15 **Modeling of subtropical stratocumulus to cumulus transition with EULAG**

*Marcin J. Kurowski, Dorota Jarecka, Hanna Pawlowska, Wojciech W. Grabowski*

12:15 - 12:45 **Virtual aircraft: a new approach to compare airborne in-cloud measurements and LES simulations.**

*Marta K. Kopec, Szymon P. Malinowski, Wojciech W. Grabowski*

12:45 - 14:15 Lunch Break

14:15 - 14:45 **A high order cell centred Lagrangian Godunov scheme for cylindrical geometry**

*Andrew J. Barlow* 14:45 - 15:15

15:15 - 15:30 Short break

15:30 - 16:00 **Continuous Dynamic Grid Adaptation in A Global Atmospheric Model: Application and Refinement**

*Babatunde Abiodun, William J. Gutowski, Jr., Joseph M. Prusa, Piotr Smolarkiewicz*

16:00 - 16:30 **Modelling Atmospheric Flows with Adaptive Moving Meshes.**

*Christian K`uhnlein, Piotr K. Smolarkiewicz, and Andreas D`ornbrack*

16:30 - 16:35 Short break

16:35 – 18:35 EULAG tutorial Part 1

**Wednesday, 27 June 2012**

09:00 - 09:30 **Challenges for weather and climate prediction - a UK perspective**

*Nigel Wood*

09:30 - 10:00 **The development of anelastic dynamical core for the future NWP model**

*Damian K. Wójcik, Marcin J. Kurowski, Bogdan Rosa, Michał Z. Ziemiański*

10:00 - 10:30 **Multi-Scale Waves in Sound-Proof Global Simulations with EULAG**

*Joseph M. Prusa, William J. Gutowski*

10:30 - 10:45 Tea & Coffee

10:45 - 11:15 **Turbulence Structure in a Fractal Forest under Varying Atmospheric Conditions**

*Josef Schrötte, Andreas Doernbrack and Piotr K. Smolarkiewicz*

11:15 - 11:45 **A low Mach number model for moist convection**

*Warren O'Neill, Rupert Klein*

11:45 - 12:15 **LES and DNS of Inertia-Gravity Wave Breaking**

*Mark Fruman, Ulrich Achatz, Stefan Hickel, Sebastian Remmler, and Felix Rieper*

12:15 - 12:45 **An Unstructured Adaptive Mesh Model for Stratified Turbulence in Atmospheric Flows**

*Joanna Szmelter, Piotr K. Smolarkiewicz*

12:45 - 14:15 Lunch Break

12:45 - 14:15 NERC project partners meeting

14:15 - 14:45 **Impact of cirrus clouds on tropopause structure and tracer distributions**

*P. Reutter and P. Spichtinger*

14:45 - 15:15 **Modeling warm-rain microphysics and dynamics-microphysics interactions with EULAG-based large-eddy simulation model.**

*W. W. Grabowski, A. A. Wyszogrodzki, J. Slawinska, D. Jarecka, H. Pawlowska, and L.-P. Wang*

15:15 - 15:30 Short break

15:30 - 16:00 **A study of the critical processes which determine the severe precipitation events over the Hajar Mountains using observations and model simulations**

*Juma Al-Maskari, Alan Gadian, Piotr Smolarkiewicz, Barbara Brooks*

16:00 - 16:30 **The direct modelling of subgrid-scale stresses and its relevance for medium range weather prediction.**

*Nils P. Wedi,*

16:30 - 16:35 Short break

16:35 - Poster Presentations

**Thursday, 28 June 2012**

09:00 - 09:30 **Parallelization of MPDATA on Multicore Architectures with GPU Accelerators Using Load Balancing and Autotuning Techniques**

*Lukasz Szustak, Krzysztof Rojek, and Roman Wyrzykowski*

09:30 - 10:00 **Recent parallelisation and robustness improvements modelling plasma physics experiments with CORVUS.**

*Robert Kevis*

10:00 - 10:30 **Towards petascale simulation of atmospheric circulations with soundproof equations**

*Zbigniew P. Piotrowski, A.A. Wyszogrodzki, P.K. Smolarkiewicz*

10:30 - 10:45 Tea & Coffee

10:45 - 11:15 **Simulating Three-Dimensional Fluid Flow in Porous Media**

*Larray Winter, Jeffrey D. Hyman, Piotr K. Smolarkiewicz P2*

11:15 - 11:45 **Recent progress on developing the new anelastic dynamical core for the further operational NWP model – COSMO**

*Bogdan Rosa, Marcin J. Kurowski, Damian K. Wójcik and Michał Z. Ziemiański*

11:45 - 12:15, **Evaluation of vertical mass flux in high-resolution simulations of convective clouds**

*Katrin Scheufele, George C. Craig, Andreas Doernbrack*

12:15 - 12:45 **Toward all-scale simulation of moist atmospheric flows with soundproof equations**

*Wojciech W. Grabowski, Marcin J. Kurowski, Zbigniew P. Piotrowski, Piotr K. Smolarkiewicz P1*

12:45 - lunch

14:00 – onwards EULAG tutorial Part 2 & master code development discussions

16:35 – 18:35 **Friday, 29 June 2012**

09:00-11:00 Tea & Coffee

09:00-18:00 Workshop rooms are available to participants for discussions, meetings & collaboration.