

QLES2009



UNIVERSITÀ DI PISA

Quality and Reliability of Large-Eddy Simulations II QLES2009 9-11 September 2009, Pisa (Italy)

Day 1: Wednesday 9 September 2009

8.00-9.00: Registration

9.00-9.10: Welcome and Introduction

9.10-10.00: Invited presentation: J. Meyers, *Error-landscape assessment of large-eddy simulations: a review*

10.00-11.00: Session 1: Modeling and error assessment of near-wall flows

- R. Zamansky, I. Vinkovic and M. Gorokhovski, *LES-SSAM for a high Reynolds number turbulent channel flow*
- A. Cimarelli and E. De Angelis, *Energy cascade and spatial fluxes of filtered wall-turbulent flows*
- J. Hoffman and N. Jansson, *A computational study of turbulent flow separation for a circular cylinder using skin friction boundary conditions*

11.00-11.30: Coffee break

11.30-12.30: Session 2: SGS modeling and discretization errors I

- F.M. Denaro and G. De Stefano, *A new development of the dynamic procedure for the integral-based implicit filtering in large-eddy simulation*
- M. Meldi and F. Perini, *Reduced interaction between numerical and model errors through anisotropic filtering*
- A. Tyliczszak and A. Bogulawski, *Analysis of the subgrid models in the flow between rotating discs*

12.30-13.40: Lunch

13.40-14.30: Invited presentation: Th. Poinso, *Numerical and physical instabilities in massively parallel LES of reacting flows*

14.30-15.30: Session 3: SGS modeling and discretization errors II

- A. Pecenko and J.G.M. Kuerten, *A priori analysis of an isothermal, turbulent two-phase flow*
- C.M. Kaul, V. Raman, G. Balarac and H. Pitsch, *A Posteriori analysis of numerical errors in computing scalar variance*
- H. Ouvrard, M.V. Salvetti, B. Koobus and A. Dervieux, *Quality assessment of classical and variational multiscale LES of the flow around a circular cylinder*

15.30-16.00: Tea break

16.00-16.50: Invited presentation: Ph. Spalart, M. Strelets and A. Garbaruk, *Grid design and the fate of eddies in external flows*

18.30: Reception at Giardino Scotto

Day 2: Thursday 10 September 2009

9.00-9.50: Invited presentation: M. Parlange, *Experimental studies of subgrid-scale processes under stable and unstable atmospheric stability conditions for Large Eddy Simulation*

9.50-11.10: Session 4: SGS modeling and discretization errors III - Atmospheric and environmental flows

- A.F. Moene, P. Baas, F.C. Bosveld and S. Basu, *LES model intercomparisons for the stable atmospheric boundary layer*
- B.A. Burkholder, E. Fedorovich and A. Shapiro, *Evaluating subgrid-scale models for large-eddy simulation of turbulent katabatic flow*
- V. Stocca, F. Roman and V. Armenio, *Modeling issues in large-eddy simulations of environmental flows*
- T. Esposti Ongaro, S. Barsotti, A. Neri and M.V. Salvetti, *Large-eddy simulation of pyroclastic density currents*

11.10-11.40: Coffee break

11.40-12.40: Session 5: Assessment and reduction of computational errors I

- D. Fauconnier, C. D. Langhe and E. Dick, *Quality assessment of dynamic finite difference schemes on the Taylor-Green vortex*
- G. De Stefano and O. Vasilyev, *Stochastic coherent adaptive large-eddy simulation with explicit filtering*
- C. Hertel and J. Fröhlich, *Error reduction in LES via adaptive moving grids*

12.40-13.50: Lunch

13.50-14.40: Invited presentation: J.L. Guermond, *From suitable weak solutions to entropy viscosity*

14.40-16.00: Session 6: Mathematical analysis and foundation for SGS modeling

- M. Germano, *A new deconvolution approach*
- L.C. Berselli, T. Iliescu and T. Özgökmen, *Horizontal Approximate Deconvolution for Stratified Flows: Analysis and Computations*
- J. Pietarila Graham, D. Holm, P. Mininni and A. Pouquet, *The effect of subfilter-scale properties on regularization models*
- R.W.C.P. Verstappen, *When does eddy viscosity damp subfilter scales sufficiently?*

16.00-16.30: Tea break

16.30-17.50: Session 7: SGS modeling and discretization errors IV - Particle-laden flows

- J. Pozorski and M. Luniewski, *Analysis of SGS effects on dispersed particles in LES of heated channel flow*
- M. Jaszczur, B.J. Geurts, H. Kuerten, *Relevance of approximate deconvolution for one-way coupled motion of inertial particles in LES of turbulent channel flow*
- C. Marchioli, M.V. Salvetti and A. Soldati, *Inertial particle segregation and deposition in large-eddy simulation of turbulent wall-bounded flows*
- N.A. Konan, P. Fede, O. Simonin and K.D. Squires, *Effect of particle - particle and particle - rough wall collisions on the statistics of inertial particles suspended in turbulent channel flow*

19.30: Conference dinner at Cloister of San Francesco Church

Day 3: Friday 11 September 2009

9.00-9.50: Invited presentation: A. M. Kempf, *Quality issues of combustion LES*

9.50-11.10: Session 8: SGS modeling and discretization errors V - Combustion LES

- L. Vervisch, P. Domingo, G. Lodato and D. Veynante, *Scalar sub-grid energy in large-eddy simulation of turbulent flames: mesh quality criterion*
- S. Srinivasan, A.G. Smith and S. Menon, *Accuracy, reliability and performance of spray combustion models in LES*
- B. Manickam, J. Franke, S.P.R. Muppala and F. Dinkelacker, *LES of triangular-stabilized lean premixed turbulent flames with an algebraic reaction closure: quality and error assessment*
- B.J. Geurts and A.M. Kempf, *Computational error-minimization for LES of non-premixed turbulent combustion*

11.10-11.40: Coffee break

11.40-12.20: Session 9: SGS modeling and discretization errors VI - Complex applications

- P. Wolf, L. Y. M. Gicquel, G. Staffelbach and Th. Poinsot, *Grid effects on LES thermo-acoustic limit-cycle of a full annular aeronautical engine*
- D. Carati and P. Morel, *Extension of LES approaches to conductive fluids and plasmas*

12.20-13.30: Lunch

13.30-14.20: Invited presentation: L. Davidson, *How to estimate the resolution of an LES of recirculating flow*

14.20-15.40: Session 10: Assessment and reduction of computational errors II

- C. Bogey and C. Bailly, *Influence of Reynolds number and grid resolution on large-eddy simulations of self-similar jets based on relaxation filtering*
- J.R. De Bonis, *An examination of the spatial resolution requirements for LES of a compressible jet*
- H. Xu, *A computational uncertainty analysis of LES/DNS: towards building a reliable engineering turbulence prediction capability*
- M. Manhart, C. Rapp, N. Peller, M. Breuer, O. Aybay, J.A. Denev and C.J. Falconi, *Assessment of eddy resolving techniques for the flow over periodically arranged hills up to $Re=37000$*

15.40: Closing