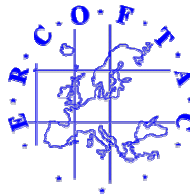


Symposium on Hybrid RANS-LES Methods

Rica City Hotel, Stockholm, 14-15 July, 2005

Hosted by
Swedish Defence Research Agency (FOI)

Sponsored by



Final Program

Thursday, 14 July 2005 - morning sessions	
08:00 – 08:45	Registration
08:45 – 09:00	Welcome
09:00 – 10:00	<p>Keynote (Chaired by W. Haase, EADS-M, Germany) P. Spalart (Boeing Company, USA) The uses of DES: natural, extended, and improper</p>
10:00 – 10:20	Coffee break
10:20 – 12:00	<p>Session 1 (Chaired by W. Haase, EADS-M, Germany)</p> <p>10:20 – 10:45 A. Garbaruk, M. Shur, M. Strelets and A. Travin (NTS, Russia) Detached-eddy simulation of a linear compressor cascade with tip gap and moving wall</p> <p>10:45 – 11:10 H. Lüdeke (DLR, Germany) Simulation of sub-, trans- and supersonic flow fields with DES by the DLR TAU code</p> <p>11:10 – 11:35 H.C. Kim, K. Nakahashi, H.J. Kim, M. Tsunoda, T. Kato (Tohoku University, Japan) Flow analysis around a dimpled cylinder using detached-eddy simulation</p> <p>11:35 – 12:00 J. Ko and S. Zahrai (KTH, Sweden) Detached eddy simulation of highly swirling flows in a cylindrical hydrocyclone.</p>
12:00 – 13:30	Lunch

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Thursday, 14 July 2005 - afternoon sessions

13:30 – 14:15	<p>Keynote (Chaired by F. Menter, ANSYS, Germany)</p> <p>A. Boguslawski, S. Drobniak and A. Tyliczszak (Czestochowa Univ. of Tech., Poland) Application of LES and RANS-LES methods for modelling of flow and combustion in combustion chamber of aeroengines</p>
14:15 – 15:55	<p>Session 2 (Chaired by F. Menter, ANSYS, Germany)</p> <p>14:15 – 14:40 O. Vitek, M. Polásek, K. Kozel, J. Macek (Czech Technical Univ. in Prague, Czech) U-RANS model of internal combustion engine</p> <p>14:40 – 15:05 N. Jarrin, D. Benhamadouche, D. Laurence, R. Prosser (Manchester University, UK; EDF, France) A synthetic-eddy-method for generating inflow conditions for large-eddy simulations</p> <p>15:05 – 15:30 F. Mathey, D. Cokljat (Fluent, Sweden/France) RANS-LES inlet boundary condition for aerodynamic and aero-acoustic applications</p> <p>15:30 – 15:55 L. Davidson (Chalmers University of Technology, Sweden) Inlet boundary conditions for hybrid LES-RANS</p>
15:55 – 16:25	Coffee break
16:25 – 18:30	<p>Session 3 (Chaired by S.-H. Peng, FOI, Sweden)</p> <p>16:25 – 16:50 P. Nayyar, G.N. Barakos, K.J. Badcock (University of Glasgow, UK) CFD analysis of transonic cavity flow using DES and LES</p> <p>16:50 – 17:15 F. Simon, S. Deck, P. Guillen, P. Sagaut (ONERA, France) Hybrid RANS-LES simulations of supersonic base flow</p> <p>17:15 – 17:40 F. Magagnato, J. Rachwalski, M. Gabi (University of Karlsruhe, Germany) Transition prediction on a turbine blade at high Reynolds numbers by LES</p> <p>17:40 – 18:05 C. Tulita, S. Raghunathan (The Queen's University of Belfast, UK) Effect of the turbulent transition on the transonic periodic flow</p> <p>18:05 – 18:30 T. Persson, M. Liefvendahl and C. Fureby (FOI/Chalmers, Sweden) Comparison of DES and LES for separated flow over an axisymmetric hill</p>
20:00	Dinner

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Friday, 15 July 2005 - morning sessions

08:30 – 09:00	Late Registration
09:00 – 09:55	<p>Keynote (Chaired by B. Aupoix, ONERA, France)</p> <p>K. Hanjalić (Delft University of Technology, the Netherlands) Accommodating LES to high Re numbers: RANS-based or a new strategy?</p>
09:55 – 10:20	Coffee break
10:20 – 12:25	<p>Session 4 (Chaired by B. Aupoix, ONERA, France)</p> <p>10:20 – 10:45 F. Menter, Y. Egorov (ANSYS, Germany) Status of SAS turbulence modelling in the DESIDER project</p> <p>10:45 – 11:10 G. Kaltzin, J.A. Templeton, G. Medic (Stanford University, USA) LES at high Re numbers: a near-wall eddy viscosity formulation</p> <p>11:10 – 11:35 Z. Xiao, H. Chen, S. Fu, Y. Zhang (Tsinghua University, China) Study of transonic separated flows with RANS/LES methods on non-linear turbulence models</p> <p>11:35 – 12:00 F. Tessicini, M.A. Leschziner (Imperial College, UK) Approximate near-wall treatments based on zonal RANS-LES hybrid methods at high Reynolds numbers</p> <p>12:00 – 12:25 A. Jafari, K. Henttinen and P. Zamankhan (Lappeenranta Univ. of Tech., Finland) Multiscale modelling, simulation and experimental studies of fluid turbulence and fiber flocculation in fiber suspensions</p>
12:25 – 13:45	Lunch

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Friday, 15 July 2005 - afternoon sessions

13:45 – 14:30	Keynote (Chaired by M. Strelets, NTS, Russia) H. Rieger (EADS-M, Germany) First experiences with detached-eddy simulation in the aeronautics industry
14:30 – 16:35	Session 5 (Chaired by M. Strelets, NTS, Russia)
14:30 – 14:55	U. Bunge, C. Mockett, F. Thiele, J.C. Kok, H. van der Ven, T. Knopp, K. Weinman (TUB, Germany; NLR, the Netherlands; DLR, Germany) A grid convergence study for DES-like simulations of a stalled airfoil
14:55 – 15:20	A. Soda, K. Weinman, T. Knopp (DLR, Germany) Numerical investigation of transonic shock oscillation on stationary airfoils
15:20 – 15:45	S. Deck (ONERA, France) Zonal-detached eddy simulation of the flow around a multi-element airfoil
15:45 – 16:10	M. Kuroda, K. Nakahashi, Y. Fukunishi (Tohoku University, Japan) DES simulation around NACA0012 airfoil using unstructured grid
16:10 – 16:35	S. Crippa (KTH, Sweden) Steady and unsteady CFD analysis of a half-span Delta wing
16:35	Closing remarks / Farewell coffee