

Jet Noise Prediction Methodologies : Recent Developments

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School of Engineering Trinity College Dublin Ireland

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Thursday 28 September

09:00 Welcome

09:15 Dr. James Bridges, NASA, USA ‘Jet Noise Measurement Techniques’

Session A - CFD 1 (L-E Eriksson)

10:00 Y. Detandt, G. Degrez, S. Caro ‘Large Eddy Simulation for a Re=14000 Jet Noise Problem’

10:20 G. J. Page, X. Wu, J. Luff, J.J McGuirk ‘Sector LES to Improve High Frequency Jet Noise Prediction’

10:40 J. Berland, C. Bogey, C. Bailly ‘Investigation of Shock-Induced Noise in a Supersonic Jet Using Large Eddy Simulation’

11:00 Coffee

Session B - Analytical and Semi-Empirical Methods (P. Jordan)

11:20 M. Azarpeyvand, R. ‘Self Use of a New Time Scale in Jet Aeroacoustics’

11:40 G. Savu ‘A Novel Approach for the Computation of Co-Axial Jets’

12:00 B. Tester, L. Garrison, M. Fisher ‘Developments in Lobed Mixer Noise Prediction’

12:30 Lunch

Session C - Experimental Studies (D. Riordan)

14:00 P. Jordan, E. Laurendeau, C. Tinney, A. Guitton, J. Delville, J-P Bonnet 'Interpreting the Near Pressure Field of Unbounded Jets'

14:20 S. Guérin, U. Michel 'Circumferential Analysis of the Near Pressure Field of a Co-Axial Subsonic Jet'

14:40 F. Kerherve, J. Fitzpatrick, P. Jordan 'The Frequency Dependence of Turbulence Characteristics in Jets'

15:00 R. Camussi, G. Guj 'Noise Generated by Intermittent Coherent Structures in Low Mach Number Turbulent Jets and Adaptive Control Using Microjets'

15:20 Coffee

Session D - CFD 2 (D. Juvé)

15:40 K. Viswanathan, M. Shur, P. Spalart, M. Strelets 'Synergy between Experiment and Large Eddy Simulation for Jet Aeroacoustics'

16:00 F. Vuillot, N. Lupoglazoff, G. Rahier 'Comparative Studies of Double Stream Nozzle Jet Noise Using Unsteady Numerical Simulations'

16:20 N. Andersson, L-E Eriksson 'Prediction of Flow Field and Acoustics Signature of a Coaxial Jet using RANS-based Methods and Large Eddy Simulation'

16:40 P. Spalart, M. Shur, M. Strelets 'Numerical Prediction of Jet Noise: Full Geometries and High Frequencies'

17:00 Closing Remarks

19:30 Workshop Dinner

Friday 29 September

09:15 Professor Christophe Bailly, ECL, France 'Large Eddy Simulation for Jet Noise Prediction'

Session E - Source Modelling (B. Tester)

10:00 A. Vuillemin, P. Loheac 'Aeroacoustic Optimization of a Chevron Nozzle for a High Bypass Ratio Engine using Analytical and Numerical Methods Full Paper'

10:20 V. Kopiev, M. Zaitsev, S. Chernyshev 'Comparison of Vortex Ring Noise Theory with Excited Jet Acoustic Measurements'

10:40 J. Varnier, V. Koudriavtsev, A. Safronov 'A Model for Jet Aerodynamics for Acoustics'

11:00 Coffee

Session F - CFD 3 (C. Meskell)

11:20 J. Yan, K. Tawackolian, U. Michel, F. Thiele 'Computation of Jet Noise Using a Hybrid Approach'

11:40 X. Li, J. Gao 'Numerical Computation of Axisymmetric Supersonic Jet Screech Tones from a Generic Nozzle'

12:00 Discussions and Closure

13:00 Lunch