

CTR SUMMER PROGRAM 2012

Group	Participants	Project Title	Host
Acoustics	Julien Christophe Stéphane Moreau	Uncertainty quantification of turbo-engine fan noise	Iaccarino
	Jean-Christophe Giret Stéphane Moreau	Uncertainty quantification of the far-field noise from a Rod-Airfoil configuration using compressible LES simulations	Iaccarino
	Emmanuel Motheau Franck Nicoud Laurent Selle	Thermo-acoustic instabilities in high-speed reacting flows: entropy-acoustic coupling and uncertainty quantification	Urzay
	Prem Venugopal	Large eddy simulation of self-noise from a wind turbine airfoil at high angle of attack	Bodart
Algorithms	Stefan Adami Hu Xiangyu	Simulating 3D turbulence with SPH	Covington
	Pascale Domingo Guillaume Ribert Luc Vervisch	An hybrid transported-tabulated strategy to downsize detailed chemistry for large Eddy Simulation	Ihme/Larsson
	Guillaume Balarac Georges-Henri Cottet Jean-Baptiste Lagaert	Particle method: an efficient tool for direct numerical simulations of high Schmidt number passive scalar in turbulent flow	Bodart
Combustion	Tai Jin Kun Luo	Priori and Posteriori Test of the Extended Flamelet Model for Supersonic Combustion	Saghafian
	Bénédicte Cuenot Raphael Mari Laurent Selle	Stabilization Mechanisms of Supercritical Hydrogen/Oxygen Flame	Ihme/Urzay
	Edward Richardson	Effects of scalar dissipation rate fluctuations on turbulent auto ignition: DNS analysis and modeling	Kaul
	Matthieu Boileau Vincent Moureau Thomas Schmitt Denis Veynante	Analysis of dynamic models for turbulent combustion	Bose/Kaul
	Wai Lee Chan Matthias Ihme Yee Chee See	Jet noise receptivity of heated compressible jets and Flame-stabilization and heat-transfer analysis of a jet-in-cross-flow	Ihme

	Antonio Attili Fabrizio Bisetti	DNS of soot formation and growth in turbulent non-premixed flames: Damkohler number effects and Lagrangian statistics of soot transport	Mueller
Controls/ Dynamic Mode Decomposition	Daniel Bodony	Controller Selection and Placement in Compressible Turbulent Flows	Nichols
	Peter Schmid	Dynamic mode decomposition of H-type and K-type transition to turbulence	Nichols
	Franck Richecoeur	Dynamic mode decomposition for experimental investigation of combustion instabilities	Sayadi
	Lieu Binh Mihailo Jovanović	Analysis of drag reduction by polymers in turbulent wall-bounded shear flows	Guglielmini
LES	François Cadieux Julian Domaradzki	LES of Separated Flows at Moderate Reynolds Numbers Appropriate for Turbine Blades and Unmanned Aero-Vehicles	Bose/Hamman
	Stefan Hickel Emile Toubert	Wall modeling for LES of supersonic flows at realistic Reynolds numbers	Bodart/Larsson
	Mohammad Saeedi Bing-Chen Wang	Advanced subgrid-scale modeling for LES of Passive scalar dispersion in a turbulent boundary-layer	Bose/Hamman
	Guillaume Balarac	Subgrid-scale modeling of SGS scalar flux: a regularization of the gradient model	Bose
	Guillaume Balarac Pascale Domingo Florent Duchaine Nicolas Maheu Vincent Moureau	Large-Eddy Simulations of flow and heat transfer around a low-mach turbine blade	Bermejo-Moreno
	Jongwook Joo Georgi Kalitzin Goradz Medic	Large eddy simulation for turbomachinery blades	Bermejo-Moreno
RANS	Stavros Kassinos Konstantinos Panagiotou Rene Pečnik Hari Radhakrishnan	Validation of the Algebraic Structure-Based Model for Internal Flows with Three-Dimensional Effects	Campo/Duraisamy/laccarino
	John O'Sullivan	ASBM wall function modeling for the flow in a asymmetric three-dimensional diffuser	Duraisamy/laccarino
	Elbert Jeyapaul Christopher Rumsey	Advanced RANS modeling of separated flows	Duraisamy/laccarino/Ryu

Fundamentals of Transition and Turbulence	Dennice Gayme	Understanding Large-Scale Momentum Transfer Mechanisms in Turbulent Couette Flow	Hamman
	Kevin Nolan Zaki Tamer	Conditional Sampling and Statistical Analysis of Transitional Flows	Lele
	Brian Farrel Petros Ioannou	Statistical Mean State Dynamics of Turbulent Channel Flows	Hamman
	Matteo Bernardini Sergio Pirozzoli	Compressible boundary layer transition induced by isolated roughness elements	Nichols
	Olaf Marxen Gennaro Serino	Boundary Layer Transition	Gorle
	Yves Dubief Vincent Terrapon	Analysis of transitional polymeric flows and elastic instabilities	Bermejo Moreno
	James Wallace	Spatially developing DNS databases	Mayoral-Garcia
Two-Phase	Herrmann Marcus	Improving Atomization Simulations	Kim
	Mikhael Gorokhovski Andrey Ovsyannikov	Development of new numerical models for turbulent flow with sprays at a high Reynolds number	Zamansky
	Guo-Wei He	A Germano-type identity for large-eddy simulation coupled with discrete particle dynamics	Mani
	Nicolas Rimbart	Sub-Grid Modeling of the Secondary Breakup Mechanism in Two-Phase LES	Kah/Massot
	François Doisneau Rodney Fox Adam Larat Marc Massot Aymeric Vie	Fully Eulerian Large Eddy Simulation of dilute-to-dense polydisperse turbulent sprays: modeling approaches and numerical methods	Kah/ Zamansky
	Lucie Fréret Marc Massot	Direct numerical simulation of polydisperse evaporating sprays in 3D jet configurations	Shashank

UQ	Jerôme Dombard Vincent Moureau Thierry Poinso Nicolas Savary	Quantification of uncertainties in LES and RANS of swirled flows in gas turbine injection systems	Dombard/laccarino
	Patrick Blonigan Rui Chen Qiqi Wang	Sensitivity analysis of mixing in separated turbulent flows	Larsson
	Pietro Congedo Gianluca Geraci	Adaptive strategy in multiresolution framework for uncertainty quantification	laccarino/Witteveen
	Didier Lucor	Adaptive uncertainty quantification approaches for stiff systems and multi-scale modes	Constantine/laccarino Witteveen
	Bénédicte Cuenot Mélanie Rochoux Sophie Ricci Arnaud Trouvé	Towards predictive simulations of wildfire spread using data assimilation and uncertainty quantification	Constantine/laccarino
	Toshijuki Arima Hiroki Tachikawa	Robust optimization for windmill airfoil design considering variation in wind conditions	laccarino/Schiavazzi