

## CONTENTS

<b>Preface</b>	1
Heat-transfer rates in equilibrium-wall-modeled LES of supersonic turbulent flows. X. I. A. YANG, J. URZAY AND P. MOIN	3
Dynamic analysis of coherent processes in transitional and turbulent boundary layers. M. J. P. HACK AND P. MOIN	17
Modeling boundary-layer transition in DNS and LES using parabolized stability equations. A. LOZANO-DURÁN, M. J. P. HACK, G. I. PARK AND P. MOIN	29
Wall-modeled LES: Recent applications to complex flows. G. I. PARK AND P. MOIN	39
LES of hypersonic compression-corner flows with upstream sub-boundary-layer microramp vortex generators. J. KIM, I. BERMEJO-MORENO, A.-M. SCHREYER AND J. URZAY	51
A physics-based interpretation of the slip-wall LES model. X. I. A. YANG, S. T. BOSE AND P. MOIN	65
Investigation of the slip boundary condition in wall-modeled LES. H. J. BAE, A. LOZANO-DURÁN AND P. MOIN	75
LES of the convective boundary layer: A minimum-dissipation modeling approach. M. ABKAR AND P. MOIN	87
Turbulent channel with slip boundaries as a benchmark for subgrid-scale models in LES. A. LOZANO-DURÁN AND H. J. BAE	97
A dynamic approximate deconvolution model for unfiltered scalars in LES. M. BASSENNE AND J. URZAY	105
Extraction of coherent clusters in particle-laden turbulent flows using wavelet filters. M. BASSENNE, J. URZAY AND P. MOIN	107

A robust method for quantification of preferential concentration from finite number of particles. L. VILLAFANE-ROCA, M. ESMAILY-MOGHADAM, A. BANKO AND J. K. EATON	123
Analytical prediction of the segregation of inertial particles in turbulent flows. M. ESMAILY-MOGHADAM AND A. MANI	137
On the development of a subgrid-scale model for the generation of micro-bubbles from impacting liquid surfaces. W. H. R. CHAN, J. URZAY, A. MANI AND P. MOIN	149
Conservative and bounded volume-of-fluid advection on unstructured grids. C. IVEY AND P. MOIN	163
Toward direct numerical simulation of multicomponent fuel spray auto-ignition. L. ESCLAPEZ, P. GOVINDARAJU AND M. IHME	181
On interfacial transport in transcritical flows of liquid fuels into high-pressure combustors. L. JOFRE AND J. URZAY	193
Supercritical pseudoboiling for general fluids and its application to injection. D. T. BANUTI, M. RAJU AND M. IHME	211
Numerical methods to prevent pressure oscillations in transcritical flows. P. C. MA, Y. LV AND M. IHME	223
Compositional inhomogeneities as a source of indirect noise in subsonic and supersonic nozzles. L. MAGRI, J. O'BRIEN AND M. IHME	235
Toward a resolvent-based statistical jet-noise model. A. TOWNE, G. A. BRÈS AND S. K. LELE	247
A framework for estimating epistemic uncertainty in LES closures. L. JOFRE, S. P. DOMINO AND G. IACCARINO	259
A return to eddy viscosity model for epistemic UQ in RANS closures. W. N. EDELING, G. IACCARINO AND P. CINNELLA	273
RANS predictions for high-speed flows using enveloping models. A. A. MISHRA AND G. IACCARINO	289

Multi-material diffuse-interface Eulerian formulation for high-order simulations of elastic-plastic flow in solids. N. S. GHASAS, A. SUBRAMANIAM AND S. K. LELE	303
Entropy residual shock detector for shock-capturing using high-order discontinuous Galerkin scheme. Y. LV AND M. IHME	317
A case study of empty nose syndrome by nasal airflow simulation. T. FLINT, A. THAMBOO, N. VELASQUEZ, J. V. NAYAK, M. SELLIER, M. ESMAILY-MOGHADAM AND P. MOIN	329
<b>Roster</b>	<b>341</b>