

Keyword index to volume 24

- Absolute instability, 41
- Absorption, 919
- Acoustics, 562
- Active wave control, 572
- Adiabatic effectiveness, 669
- Adiabatic film cooling effectiveness, 91
- Adverse pressure gradient, 626
- Aiding flow, 260
- Airblast atomizer, 529
- Annulus, 762
- Backward boundary layer, 888
- Bed shear stress, 816
- Blade passage, 636
- Blowing, 680
- Bluff body aerodynamics, 562
- Bluff body flow, 77
- Boundary layer, 454
- Boundary layers, 626
- Boussinesq Newtonian fluid, 864
- By-pass transition, 626
- Cavitation, 774
- CFD, 434, 444, 774
- Channel flow, 372, 491
- Channel flow and heat transfer, 284
- Chaotic advection, 310, 645
- Circular cylinder, 463
- Coherent structures, 520
- Compound angle injection, 91
- Compressible turbulence, 584
- Computation, 864
- Computational fluid dynamics, 267
- Concentric annular pipe, 399
- Constricted channel, 157
- Contaminant control, 928
- Continuously moving surface, 888
- Control, 480
- Control of three-dimensional Tollmien–Schlichting instabilities, 572
- Convection, 345
- Convective instability, 41
- Cookstove, 267
- Cooling, 657
- Core-annular flow, 122
- Co-swirl, 529
- Counter-swirl, 529
- Coupled heat transfer, 736
- Cube, 807
- Delay of laminar–turbulent transition, 572
- Delta wing, 596
- Density extremum, 278
- Diesel engines, 919
- Direct numerical simulation, 399, 480, 500, 520, 584
- DNS, 356, 491, 626, 636, 785
- Domain decomposition technique, 41
- 3-D periodic flow, 310
- Drag reduction, 480
- Drag-reduction, 491
- Droplet, 919
- Droplet entrainment, 902
- Droplet number moments, 242
- 3D Wall jets, 434
- Eddy structures, 500
- Effectiveness, 267
- Efficiency, 698
- Elliptic tube, 864
- Entropy measurements, 698
- Equation-of-state, 774
- Equivalent sand grain, 454
- Eulerian–Lagrangian approach, 616
- Excitation frequency, 199
- Excitation level, 199
- Explicit heat flux model, 29
- Fabric, 114
- Far-field noise, 551
- Ffowcs Williams–Hawkins equation, 551
- Film, 657
- Film cooling, 91, 669
- Finite element method, 713
- Finite element methods, 874
- Finite volume method, 470, 562
- Flow control, 77
- Flow separation, 77
- Flowmeter, 1
- Fluctuation, 816
- Fluid-dynamics, 236
- Forced convection, 762, 807
- Forcing, 77
- Free convection, 278, 864
- Freestream turbulence, 669
- Free-stream disturbances, 626
- Friction factor, 236
- Fuel, 919
- Fully turbulent flow, 636
- Gas radiation, 736
- Giesekus model, 491
- Granular flow, 389
- Graph based evolutionary algorithm, 267
- Heat and mass transfer, 100, 242
- Heated blocks, 726
- Heat transfer, 67, 444, 454, 657, 685, 726, 807, 864
- Heat transfer coefficients, 199
- Heat transfer enhancement, 77, 356
- Herschel–Bulkley materials, 762
- High Reynolds number flows, 463

- Holography, 345
- Horizontal channel, 726
- Hot-wire anemometer, 1
- Impingement jet, 199
- Impinging flow, 181
- Impinging jet, 500, 512, 685
- Inertial subrange theory, 709
- Inflow conditions, 785
- Injectant behavior, 91
- Injection nozzles, 774
- Instability, 500
- Integrity-basis methods, 434
- Interfacial waves, 122
- Interferometry, 345
- Isothermal vertical plate, 278
- Jet, 520
- Kurtosis, 816
- Laboratory on a chip, 645
- Lagrangian velocity correlation coefficient, 709
- Laminar, 67
- Laminar convection regimes, 888
- Laminar flow, 874
- Laminar regime, 713
- Landau, 774
- Large eddy simulation, 157, 412, 500, 512, 551, 685
- Large-eddy simulation, 463, 584, 795
- Leading edge vortex, 807
- Length-scale equation, 181
- LES, 372, 470, 562, 596, 606
- Linear stability, 122
- Liquid crystal, 669
- Local mesh refinement, 596
- Lognormal distribution, 816
- Loss mechanisms, 698
- Low pressure turbine, 636
- Macrolayer, 210
- Main jet excitation, 199
- Marangoni convection, 210
- Metal foam, 825
- Micro-fluidics, 645
- Microlayer, 210
- Microscale, 284
- Microscale approach, 825
- Micro-total analysis, 645
- Microtubes, 122
- Migrating wakes, 636
- MINMOD scheme, 491
- Mixed convection, 736, 874, 888
- Mixed convection heat transfer, 260
- Mixing, 310, 645
- Mixing enhancement, 520
- Modelling, 242
- Moving sheets, 713
- Moving surface, 685
- Multiphase flow, 389
- Multiple impinging jets, 444
- Natural circulation, 853
- Natural convection, 100
- Navier–Stokes equations, 463
- Near-wall anisotropy, 181
- Non-linear eddy viscosity model, 421
- Non-linear eddy-viscosity model, 181
- Nonlinear $k-\epsilon-f_\mu$ model, 29
- Numerical analysis, 389
- Numerical method, 726
- Numerical simulation, 67, 77
- Numerical simulations, 825
- OpenMP parallel computing, 636
- Opposition control, 480
- Optimization, 267
- Partial control, 480
- Particle-laden flow, 616
- Pattern formation, 835
- Periodic conditions, 726
- Pipe flow, 480, 616
- Plane air jet, 928
- Plane jet, 785
- Pneumatic actuators, 520
- Pool boiling, 210
- Porous media, 114, 825
- Positive/negative mean shear, 421
- Pressure drop, 260
- Pressure gradient, 454
- Pressure loss, 747, 795
- Pressure variation, 928
- Probability density function, 816
- Quench front, 902
- Rational heat flux model, 680
- Rayleigh criterion, 529
- Recirculation length, 747
- Rectangular duct, 874
- Reynolds number dependence, 785
- Reynolds stress budget, 480
- Reynolds stress tensor, 181
- Riblets, 356
- Rib-wall ducts, 795
- Rotating pipe, 412
- Rough surfaces, 114
- RSTM, 470
- Safety analysis, 902
- Secondary vortices, 54
- Semi-structured grids, 596
- Sensor–actuator systems, 572
- Separated flow, 157, 181
- Separated flows, 562
- Separation, 421, 606, 626
- SGS modelling, 606
- Sharp 180° bend, 67
- Shear layer excitation, 199
- Shear thinning, 747
- Shock/boundary-layer interaction, 584
- Sine-shaped cross-section, 236
- Single phase, 284
- Size effect, 284
- Skewness, 816
- Skin friction, 454
- Slip-flow, 236
- Slug flow, 334
- Slurries, 389
- Spanwise invariance, 606
- Spectral approximation, 41
- Sprays, 242
- Spreading rate, 434
- Square cylinder, 54
- Stability, 853
- Stagnation, 500
- Stirrer, 645
- Stratified water, 278
- Streamwise repeated wave cancellation, 572
- Strouhal number, 54
- Subgrid model, 512
- Subgrid-scale models, 157
- Sub-models, 242

- Sudden expansion, 747
Supersonic flows, 520
Surface roughness, 372
Surfactant solution, 491
Swept fence, 606
Swirl flows, 529
Tabs, 657
Taylor bubble, 334
Taylor–Couette-like configuration, 41
Temperature, 864
Thermal, 864
Thermal convection, 835
Thermal flowmeter, 1
Thermal radiation, 919
Thermal stress reduction, 680
Thermochromic liquid crystal, 14, 23
Thermosyphon loop, 853
Tomography, 345
TRANS, 470
Transient heat transfer, 14, 23
Transition, 421, 500
Transition to chaos, 835
Translational velocity, 334
Transpiration, 114
Transverse curvature, 399
Traveling-wave instability, 835
Tube bundle, 470
Turbines, 626, 657
Turbulence, 372, 389, 480, 512, 529, 606, 626, 685, 709, 816
Turbulence modeling, 29, 421, 444
Turbulence modelling, 434, 454
Turbulent boundary layer, 680, 807
Turbulent flow, 356, 412
Turbulent heat transfer, 399
Turbulent jets, 551
Turbulent mixing, 529
Turbulent shear layers, 795
Two-phase flow, 616, 774
Two-phase pipe flow, 334
Uncertainties, 23
Unsteady, 67, 864
Unsteady flow, 77, 698
Unsteady mixed convection, 726
Unsteady RANS, 463
Van der Waals, 774
Vertical ducts, 736
Vertical fin array, 100
Vertical layer, 835
Vertical tube, 260
Viscoplastic materials, 762
Viscous fluids, 310
Visualizations, 520
Volume-of-fluid, 774
Vortex breakdown, 596
Vortex dislocation, 54
Vortex dynamics, 77
Vortex pairing, 199
Vortex shedding, 54
Vorticity, 54
Wake-induced turbulence, 616
Wall function, 596
Wall functions, 157
Wall modeling, 463
Wall roughness, 454
Wavy wall, 157