

Keyword index to volume 22

- 2D-LES, 252
- 3-D industrial turbulent flows, 259
- Acoustic excitation, 293, 372
- Adiabatic flow, 480
- Aerodynamic flows, 259
- Air natural convection, 424
- Air–water interaction, 245
- Algebraic scalar-flux model, 19
- Auxiliary plate, 424
- Backward-facing step, 301, 393
- Blowing ratio, 614
- Boiling heat transfer, 643
- Boiling instabilities, 643
- Boundary condition, 102
- Boundary layer, 1, 315, 409
- Bubble, 543
- Buoyancy, 633
- Buoyant flow, 323
- Carbon-dioxide gas absorption, 245
- Cavity, 180, 323
- Channel flow, 237, 509
- Chimney effect, 424
- Circular Couette flow, 473
- Clausius–Duhem inequality, 495
- Coherent structure, 332
- Combined-convection, 315
- Combustion, 633
- Compact heat exchangers, 450
- Compressor valve, 440
- Computational fluid dynamics, 409
- Constructal design, 657
- Convective heat transfer, 237, 315
- Countercurrent flow, 450
- Covolume method, 156
- CO₂-air mixture, 227
- Crossflow, 287
- Cross flow mixed convection, 168
- Crossflow heat exchangers, 657
- Curved ducts, 583
- Dense gases, 480
- Density extremum, 666
- Density inversion, 433
- Deposition, 365
- Design optimization, 573
- Diffusion combustion, 372
- Direct numerical simulation, 30, 245, 332
- Direct simulation, 72
- DNS, 237, 633
- Drag reduction, 1, 624
- Droplet heat transfer, 188
- Droplet impact, 201
- Effect of friction in pipes, 480
- Electronic equipment cooling, 180
- Entropy generation minimization, 657
- Explicit algebraic stress, 573
- Film cooling, 113, 134, 614
- Film effectiveness, 614
- Finned surfaces, 657
- Flexible vegetation, 252
- Flooding, 450
- Flow constriction, 94
- Flow control, 393
- Flow separation, 301
- Flow visualization, 279, 287
- Flow-field measurement, 519
- Foam flow, 94
- Forced convection, 279, 509
- Fouling, 525
- Frössling number, 614
- Free convection, 666
- Friction factor, 94
- Fuel/air flows, 350
- Gas exchange coefficient, 245
- Gasoline engine induction flows, 350
- Geometry, 657
- Gradient diffusion model, 19
- Grid turbulence, 227
- Heat exchanger, 168, 509, 525
- Heat transfer, 102, 134, 220, 279, 500, 552, 593
- Heat transfer coefficient, 287, 293, 614
- Heat transfer enhancement, 156, 509
- Heated vertical plate, 666
- Honami, 252
- IC engine flows, 259
- Immiscible droplets, 332
- Impinging jet, 500
- Inclined fins, 519
- Inlet valve flows, 350
- Instrumentation, 537
- Inter-particle collisions, 365
- Interaction, 252
- Interferometry, 180
- Intermittent flow, 543
- Internal combustion engines, 417
- Internal dissipation, 495
- Isothermal flow, 480
- Jet, 227
- Jet impingement heat transfer, 287
- Lagrangian simulation, 220
- Laminar, 460
- Laminarization, 315
- Large eddy simulation, 39, 323, 500
- Laser Doppler velocimetry, 417
- Leading edge, 614
- Linear perturbation, 409
- Liquid crystal, 614
- Liquid holdup, 94
- Liquid metal channel flow, 358

- Local forcing, 624
- Local velocity measurements, 358
- Longitudinal vortex, 287
- Mass fraction concentration, 227
- Mathematical modeling, 552
- MHD turbulence, 358
- Micro-shear layer, 372
- Microscale heater, 188
- Modeling, 134
- Momentum transfer, 552
- Narrow channel, 168
- Narrow rectangular channels, 450
- Natural convection, 180
- Near-wall turbulence, 113
- Non-circular jets, 633
- Nonlinear eddy viscosity model, 259
- Nozzle, 552
- Numerical, 460
- Numerical analysis, 30
- Numerical simulation, 525
- Numerical solution, 424
- Optimal geometry, 657
- Organized vortex, 252
- Particle imaging velocimeter, 301
- Particles, 220
- Perforated blocks, 509
- Perforated fins, 450
- Periodic perturbation, 301
- Phase change, 552
- Pipe fittings, 94
- PIV, 393
- PIV measurement, 315
- PIV system, 287
- Plain fins, 450
- Porous media, 102
- Potential core, 293
- Potential probes, 358
- Power spectra, 358
- Pressure drop, 94
- Pressure-drop oscillation, 643
- Probes, 537
- Radial diffuser, 440
- Radial flow, 440
- Radiation, 180
- Reattachment, 279
- Rectangular blocks, 509
- Rectangular cylinder, 279
- Reflux condensation, 450
- Resonance mixing, 372
- Reynolds number, 614
- Reynolds-stress tensor, 19
- Rotating ducts, 583
- Rotating flow, 433
- Rough wall, 237
- Scalar-flux vector, 19
- Scaling, 72
- Second-order moment closure, 487
- Secondary flow, 519, 583
- Separation, 279, 393
- Shear flow, 393
- Shear flow control, 293
- Shear-dominant flow, 332
- Shower-head holes, 134
- Similarity, 666
- Simultaneous measurements, 227
- Single droplet cooling, 188
- Slug, 543
- Solar water heater, 168
- Solidification, 473
- Spectral analysis, 417
- Spray cooling, 201
- Square duct, 460
- Stability condition, 30
- Steam bubble formation, 552
- Steam turbines, 537
- Stratified flow, 433
- Streamline curvature, 573
- Stress relation, 402
- Strouhal number, 279
- Subgrid-scale model, 323
- Suction, 487
- Swirling flows, 417
- System rotation, 30
- Thermal dispersion, 102
- Thermal non-equilibrium, 102
- Thermal wall capacity, 643
- Thermo-hydraulic performance, 460
- Thermodynamic constraint, 495
- Thermodynamic optimization, 657
- Topology, 657
- Transient, 614
- Transition, 409, 633
- Transonic cascades, 537
- Transverse magnetic field, 358
- Tube bundles, 525
- Turbine blade, 113, 593
- Turbulence, 1, 30, 39, 220, 237, 279, 409, 500, 614
- Turbulence control, 301
- Turbulence generation, 409
- Turbulence intensity, 358
- Turbulence length scale, 593
- Turbulence modeling, 402, 409, 487, 495, 593
- Turbulence models, 573
- Turbulence modification, 332
- Turbulence production, 593
- Turbulence scales, 417
- Turbulence structure, 1
- Turbulent boundary layer, 487, 624
- Turbulent dissipation rate, 495
- Turbulent flow, 315, 393
- Turbulent free surface flow, 245
- Turbulent scalar transfer, 19
- Turbulent spot, 409
- Twin jet interaction, 287
- Twisted tape, 460
- Two hot-wire probe, 227
- Two-layer model, 113
- Two-phase, 543
- Two-phase flow, 220, 537
- Two-phase turbulent flow, 365
- U-bend duct flows, 259
- Unsteady flow, 301, 393
- Unsteady natural convection, 72
- Unstructured grid, 156
- Unstructured grid method, 259
- Velocity, 227
- Velocity profiles, 358
- Vertical pipe, 365
- Viscous dissipation, 102

Viscous dissipation, 473
Volume of Fluid, 543
Volumetric concentration, 227
Vortex pairing, 293
Vortex shedding, 525
Wall oscillation, 1

Wall-bounded flows, 402
Wall-pressure field, 39
Water, 666
Wet steam, 537
Zero pressure gradient, 573
 γ -ray absorption, 94