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47.55.df – On the breakup of bubbles at high Reynolds numbers and sub-critical Weber numbers, 591

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47.70.Nd – Database for flows of binary gas mixtures through a plane microchannel, 444

51.10.-y – Database for flows of binary gas mixtures through a plane microchannel, 444

A

A priori testing – A priori evaluations and least-squares optimizations of turbulence models for fully developed rotating turbulent channel flow, 75

Absolute instability – Absolute and convective instabilities of two-dimensional bluff body wakes in ground effect, 539

Ac electroosmosis – Double layer overlap in ac electroosmosis, 297

ADI-method – Dispersion of fine settling particles from an elevated source in an oscillatory turbulent flow, 707

Air bubble entrainment – Turbulence manipulation in air–water flows on a stepped chute: An experimental study, 388

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Amplitude equations – Dynamics and bifurcations in the weak electrolyte model for electroconvection of nematic liquid crystals: a Ginzburg–Landau approach, 726

Asymptotic solution – Asymptotic theory of an oscillating wing section in weak ground effect, 477

Averaged fluid stretch-rate – Chaotic stirring in a new type of mixer with rotating rigid blades, 239

B

Benchmark – Simulation of particles in fluid: a two-dimensional benchmark for a cylinder settling in a wall-bounded box, 309

BGK model – Conservative approximation schemes of kinetic equations for chemical reactions, 202

Biglobal linear stability – Stability of the laminar boundary layer flow encountering a row of roughness elements: Biglobal stability approach and DNS, 684

Binary mixture – Database for flows of binary gas mixtures through a plane microchannel, 444

Binary mixtures – Couette flow of a binary mixture of rigid-sphere gases described by the linearized Boltzmann equation, 823

Blade – Chaotic stirring in a new type of mixer with rotating rigid blades, 239

Bluff body wake – Absolute and convective instabilities of two-dimensional bluff body wakes in ground effect, 539

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Boundary conditions – Elementary properties of the enstrophy and strain fields in confined two-dimensional flows, 54

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Boundary layer – A family of new solutions on the wall jet, 322 – Viscous boundary layers in flows through a domain with permeable boundary, 514

Boundary layer stability – Global two-dimensional stability measures of the flat plate boundary-layer flow, 501

Bubble breakup – On the breakup of bubbles at high Reynolds numbers and subcritical Weber numbers, 591

Bubbles – The effect of a depth-dependent bubble distribution on the normal modes of internal waves: quasistatic approximation, 24

C

Cavity recirculation – Turbulence manipulation in air–water flows on a stepped chute: An experimental study, 388

Channel flow – A priori evaluations and least-squares optimizations of turbulence models for fully developed rotating turbulent channel flow, 75 – Database for flows of binary gas mixtures through a plane microchannel, 444 – Near-wall measurements of turbulence statistics in a fully developed channel flow with a novel laser Doppler velocity profile sensor, 567 – Linear stability of channel entrance flow, 579

Chemical reaction – Conservative approximation schemes of kinetic

equations for chemical reactions, 202

Circular container – Chaotic stirring in a new type of mixer with rotating rigid blades, 239

Circular cylinder – Absolute and convective instabilities of two-dimensional bluff body wakes in ground effect, 539

Clustering – Particle grouping in oscillating flows, 131

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Conformal mapping – Conformal mapping and efficient boundary element method without boundary elements for fast vortex particle simulations, 150

Continuum surface force – An improved method for calculation of interface pressure force in PLIC-VOF methods, 1

Continuum surface stress – An improved method for calculation of interface pressure force in PLIC-VOF methods, 1

Convective flows – Nonlinear convective flows in multilayer fluid system, 632

Convective instabilities – Global two-dimensional stability measures of the flat plate boundary-layer flow, 501

Corner flows – On the regularity of some thermocapillary convection models, 771

Couette flow – Couette flow of a binary mixture of rigid-sphere gases described by the linearized Boltzmann equation, 823

Cylinder drag – Simulation of particles in fluid: a two-dimensional benchmark for a cylinder settling in a wall-bounded box, 309

D

Direct Numerical Simulation – Stability of the laminar boundary layer flow encountering a row of roughness elements: Biglobal stability approach and DNS, 684

Discrete ordinates method – Conservative approximation schemes of ki-

netic equations for chemical reactions, 202

Discrete vortex technique – Influence of pitching angle of incidence on the dynamic stall behavior of a symmetric airfoil, 219

Disperse flow – Simulation of particles in fluid: a two-dimensional benchmark for a cylinder settling in a wall-bounded box, 309

Dispersion – Dispersion of fine settling particles from an elevated source in an oscillatory turbulent flow, 707

DNS – Simulation of particles in fluid: a two-dimensional benchmark for a cylinder settling in a wall-bounded box, 309 – Direct numerical simulation of turbulent Taylor–Couette flow, 552

Double layer overlap – Double layer overlap in ac electroosmosis, 297

Dynamic stall vortex – Influence of pitching angle of incidence on the dynamic stall behavior of a symmetric airfoil, 219

E

Eckhaus stability – Dynamics and bifurcations in the weak electrolyte model for electroconvection of nematic liquid crystals: a Ginzburg–Landau approach, 726

Eddy diffusivity – Dispersion of fine settling particles from an elevated source in an oscillatory turbulent flow, 707

Enstrophy – Elementary properties of the enstrophy and strain fields in confined two-dimensional flows, 54

Extreme waves – Large-amplitude steady rotational water waves, 96

F

Fast imaging – Conformal mapping and efficient boundary element method without boundary elements for fast vortex particle simulations, 150

Finite volume scheme – The reservoir technique: a way to make Godunov-type schemes zero or very low diffuse. Application to Colella–Glaz solver, 643

Flow separation – Solving for unsteady airflow in a glottal model with immersed moving boundaries, 42

Fluid mixer – Chaotic stirring in a new type of mixer with rotating rigid blades, 239

Forced gravity waves – Supercritical surface gravity waves generated by a positive forcing, 750

Free surface flows – An improved method for calculation of interface pressure force in PLIC-VOF methods, 1

Front (interface) of evaporation – Catastrophic transition to instability of evaporation front in a porous medium, 665

G

Global modes – Global two-dimensional stability measures of the flat plate boundary-layer flow, 501

Glottal airflow – Solving for unsteady airflow in a glottal model with immersed moving boundaries, 42

Ground effect – Asymptotic theory of an oscillating wing section in weak ground effect, 477 – Absolute and convective instabilities of two-dimensional bluff body wakes in ground effect, 539

H

Hasselmann equation – Numerical verification of the weak turbulent model for swell evolution, 361

Hopf bifurcation – Dynamics and bifurcations in the weak electrolyte model for electroconvection of nematic liquid crystals: a Ginzburg–Landau approach, 726

Hydrodynamic instability – Control of a laminar separating boundary layer by induced stationary perturbations, 466 – Linear stability of channel entrance flow, 579

Hydrodynamic solitons – Formation dynamics of sand bedforms under solitons and bound states of solitons in a wave flume used in resonant mode, 251

Hyperbolic systems of conservation laws – The reservoir technique: a way to make Godunov-type schemes zero or very low diffuse. Application to Colella–Glaz solver, 643

I

Injection/suction – A family of new solutions on the wall jet, 322

Instabilities – Nonlinear convective flows in multilayer fluid system, 632

Interface – An improved method for calculation of interface pressure force in PLIC-VOF methods, 1

Interfaces – Nonlinear convective flows in multilayer fluid system, 632

Interfacial flow – Simulation of an optically induced asymmetric deformation of a liquid–liquid interface, 419

Interfacial surfaces – Identification of boundary planes in three-dimensional flows, 290

Internal waves – The effect of a depth-dependent bubble distribution on the normal modes of internal waves: quasistatic approximation, 24

Inviscid flow – Wave motions near a translating plate in a stratified fluid with infinite depth, 110

K

Kinetic theory – Rarefied gas flow in concentric annular tube: Estimation of the Poiseuille number and the exact hydraulic diameter, 609 – Orbital effects of the Magnus force on a spinning spherical satellite in a rarefied atmosphere, 623 – Rarefied gas flow in a triangular duct based on a boundary fitted lattice, 810

Kinetic theory of gases – Database for flows of binary gas mixtures through a plane microchannel, 444

Knudsen number – Gas flow through an elliptical tube over the whole range of the gas rarefaction, 335 – Rarefied gas flow in concentric annular tube: Estimation of the Poiseuille number and the exact hydraulic diameter, 609

L

Laminar boundary layer – Stability of the laminar boundary layer flow encountering a row of roughness elements: Biglobal stability approach and DNS, 684

Laminar flow separation – Control of a laminar separating boundary layer by induced stationary perturbations, 466

Laser Doppler – Near-wall measurements of turbulence statistics in a fully developed channel flow with a novel laser Doppler velocity profile sensor, 567

Laurent’s series expansion – Conformal mapping and efficient boundary element method without boundary elements for fast vortex particle simulations, 150

Least-squares method – A priori evaluations and least-squares optimizations of turbulence models for fully developed rotating turbulent channel flow, 75

Line-source – Dispersion of fine settling particles from an elevated source in an oscillatory turbulent flow, 707

Linearized Boltzmann equation – Couette flow of a binary mixture of rigid-sphere gases described by the linearized Boltzmann equation, 823

Liquid metal – Spin-up and spin-down dynamics of a liquid metal driven by a single rotating magnetic field pulse, 177

M

Magnetic body force – A numerical study of flows driven by a rotating magnetic field in a square container, 491

Microchannels – Gas flow through an elliptical tube over the whole range of the gas rarefaction, 335

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Microfluidics – Double layer overlap in ac electroosmosis, 297

Miscible displacement – Variable density and viscosity, miscible displacements in capillary tubes, 268

Mixing properties – Nonstationary aspects of passive scalar gradient behaviour, 433

Modulation equation – Catastrophic transition to instability of evaporation front in a porous medium, 665

Momentum transfer – Turbulence manipulation in air–water flows on a stepped chute: An experimental study, 388

Moving boundaries – Solving for unsteady airflow in a glottal model with immersed moving boundaries, 42

Multilayer systems – Nonlinear convective flows in multilayer fluid system, 632

N

Navier–Stokes – Similarity stagnation point solutions of the Navier–Stokes equations – review and extension, 678

Navier–Stokes equations – Solving for unsteady airflow in a glottal model with immersed moving boundaries, 42

Near wall – Near-wall measurements of turbulence statistics in a fully developed channel flow with a novel laser Doppler velocity profile sensor, 567

Nematic electroconvection – Dynamics and bifurcations in the weak electrolyte model for electroconvection of nematic liquid crystals: a Ginzburg–Landau approach, 726

Non-modal stability – Global two-dimensional stability measures of the flat plate boundary-layer flow, 501

Nonlinear shallow-water equations – Large-amplitude long wave interaction with a vertical wall, 409

Normal modes – The effect of a depth-dependent bubble distribution on the normal modes of internal waves: quasistatic approximation, 24

Numerical diffusion – The reservoir technique: a way to make Godunov-type schemes zero or very low diffuse. Application to Colella–Glaz solver, 643

Numerical experiments – Simulation of particles in fluid: a two-dimensional benchmark for a cylinder settling in a wall-bounded box, 309

Numerical methods – Numerical solutions of the Boltzmann equation: comparison of different algorithms, 62 – A numerical study of flows driven by a rotating magnetic field in a square container, 491

Numerical simulation – Numerical verification of the weak turbulent model for swell evolution, 361

O

Oil-skimming – Wave motions near a translating plate in a stratified fluid with infinite depth, 110

Optical radiation pressure – Simulation of an optically induced asymmetric deformation of a liquid–liquid interface, 419

Opto-hydrodynamics – Simulation of an optically induced asymmetric deformation of a liquid–liquid interface, 419

P

Parasitic currents – An improved method for calculation of interface pressure force in PLIC-VOF methods, 1

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Passive scalar gradient – Nonstationary aspects of passive scalar gradient behaviour, 433

Penalty method – Simulation of particles in fluid: a two-dimensional benchmark for a cylinder settling in a wall-bounded box, 309

Period doubling behavior – Influence of pitching angle of incidence on the dynamic stall behavior of a symmetric airfoil, 219

Permeable boundary – Viscous boundary layers in flows through a domain with permeable boundary, 514

Perturbation theory – Orbital effects of the Magnus force on a spinning

spherical satellite in a rarefied atmosphere, 623

Poiseuille flow – Database for flows of binary gas mixtures through a plane microchannel, 444

R

Rarefied flow – Continuum analytical modelling of thermal creep, 785

Rarefied flows – Rarefied gas flow in a triangular duct based on a boundary fitted lattice, 810

Rarefied gas – Gas flow through an elliptical tube over the whole range of the gas rarefaction, 335

Rarefied gas dynamics – Couette flow of a binary mixture of rigid-sphere gases described by the linearized Boltzmann equation, 823

Rarefied gases – Rarefied gas flow in concentric annular tube: Estimation of the Poiseuille number and the exact hydraulic diameter, 609

Rayleigh–Taylor instability – Catastrophic transition to instability of evaporation front in a porous medium, 665

Rigid spheres – Couette flow of a binary mixture of rigid-sphere gases described by the linearized Boltzmann equation, 823

Ripple formation – Formation dynamics of sand bedforms under solitons and bound states of solitons in a wave flume used in resonant mode, 251

Rotating fluids – Spin-up and spin-down dynamics of a liquid metal driven by a single rotating magnetic field pulse, 177

Rotating magnetic field – Spin-up and spin-down dynamics of a liquid metal driven by a single rotating magnetic field pulse, 177 – A numerical study of flows driven by a rotating magnetic field in a square container, 491

Rotational water waves – Large-amplitude steady rotational water waves, 96

Roughness – Stability of the laminar boundary layer flow encountering a row of roughness elements: Biglobal stability approach and DNS, 684

S

Sand bedforms – Formation dynamics of sand bedforms under solitons and bound states of solitons in a wave flume used in resonant mode, 251

Satellite orbit – Orbital effects of the Magnus force on a spinning spherical satellite in a rarefied atmosphere, 623

Separation control – Control of a laminar separating boundary layer by induced stationary perturbations, 466

Settling velocity – Dispersion of fine settling particles from an elevated source in an oscillatory turbulent flow, 707

Short crested wave – Short crested wave–current forces around a large vertical circular cylinder, 346

Similarity solution – A family of new solutions on the wall jet, 322

Similarity solutions – Similarity stagnation point solutions of the Navier–Stokes equations – review and extension, 678

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Spectral methods – On the regularity of some thermocapillary convection models, 771

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Spin-up – Spin-up and spin-down dynamics of a liquid metal driven by a single rotating magnetic field pulse, 177

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Stagnation flow – Similarity stagnation point solutions of the Navier–Stokes equations – review and extension, 678

Stokesian flow – Particle grouping in oscillating flows, 131

Straining flow – On the breakup of bubbles at high Reynolds numbers and subcritical Weber numbers, 591

Stratified fluid flow – Wave motions near a translating plate in a stratified fluid with infinite depth, 110

Streamwise curvature – Direct numerical simulation of turbulent Taylor–Couette flow, 552

Structure of the flow – Identification of boundary planes in three-dimensional flows, 290

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Supercritical surface waves – Supercritical surface gravity waves generated by a positive forcing, 750

Surface tension force – An improved method for calculation of interface pressure force in PLIC-VOF methods, 1

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Taylor–Couette flow – Direct numerical simulation of turbulent Taylor–Couette flow, 552

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Velocity profile sensor – Near-wall measurements of turbulence statistics in a fully developed channel flow with a novel laser Doppler velocity profile sensor, 567

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