

Keyword index

A

- Acceleration** – The dynamics of a moving sheet of liquid, part II: experiments, 572
- Acceleration waves** – Mixture of fluids involving entropy gradients and acceleration waves in interfacial layers, 596
- Acoustic wave** – Experimental investigation of 3D acoustic receptivity of an airfoil boundary layer due to surface vibrations, 621
- Airfoil** – Experimental investigation of 3D acoustic receptivity of an airfoil boundary layer due to surface vibrations, 621
- Alternating fields** – Surface waves created by low-frequency magnetic fields, 91
- Alternating magnetic field** – Shaping of sessile liquid metal drops using high-frequency magnetic fields, 149
- Amplitude dispersion** – Wave transformation models with exact second-order transfer, 659
- Aperiodic response** – Steady states, oscillations and heat explosion in a combustion problem with convection, 189
- Arteriovenous graft** – Transitional flow field characterization inside an arteriovenous graft-to-vein anastomosis under pulsatile flow conditions, 353

B

- Bichromatic transfer** – Wave transformation models with exact second-order transfer, 659
- Bifurcation** – Proportional control of oscillatory thermocapillary convection in a toy model, 296 – Transition to instability of the interface in geothermal systems, 491
- Binary mixtures** – A formulation of the linearized Boltzmann equations for a binary mixture of rigid spheres, 614
- Bore** – On the slumping of high Reynolds number gravity currents in two-dimensional and axisymmetric configurations, 71
- Boundary conditions** – The normal flux method at the boundary for multidimensional finite volume approximations in CFD, 1
- Boundary layer** – Experimental investigation of 3D acoustic receptivity of an airfoil boundary layer due to surface vibrations, 621
- Boundary layers** – Temperature distribution in a Newtonian fluid injected between two semi-infinite plates, 767
- Boundary-Element Methods** – Orientation statistics and effective viscosity of suspensions of elongated particles in simple shear flow, 125
- Boussinesq methods** – A Fourier–Boussinesq method for nonlinear water waves, 255
- Bragg reflection** – A Fourier–Boussinesq method for nonlinear water waves, 255

- Bubbly fluids** – Acoustic properties of a two-fluid compressible mixture with micro-inertia, 397 – Drag force acting on a bubble in a cloud of compressible spherical bubbles at large Reynolds numbers, 468

C

- Capillary number** – Does shear flow stabilize an immersed thread?, 379
- Cavitation** – Experimental evaluation of numerical simulation of cavitating flow around hydrofoil, 522
- CFD** – Experimental evaluation of numerical simulation of cavitating flow around hydrofoil, 522
- Chaotic attractors** – An accurate modeling of thin film flows down an incline for inertia dominated regimes, 49
- Coalescence** – Forces acting on water droplets falling in oil under the influence of an electric field: numerical predictions versus experimental observations, 717
- Coastal and offshore engineering** – A Fourier–Boussinesq method for nonlinear water waves, 255
- Combustion** – Steady states, oscillations and heat explosion in a combustion problem with convection, 189
- Contamination** – Supersonic triple deck flow past an eroding hump, 448
- Continuum equations** – Simulation of the rarefied gas flow around a perpendicular disk, 457

Control – Proportional control of oscillatory thermocapillary convection in a toy model, 296

Creeping flow – An inverse modelling technique for glass forming by gravity sagging, 275

Curtain coating – The dynamics of a moving sheet of liquid, part I: derivation of the 2D equations of motion, 555

Curvilinear co-ordinate – The dynamics of a moving sheet of liquid, part I: derivation of the 2D equations of motion, 555

D

Dam-break – Dam-break release of a gravity current in a stratified ambient, 642

Deflection – The dynamics of a moving sheet of liquid, part II: experiments, 572

Depression wave – Free surface flow under gravity and surface tension due to an applied pressure distribution II Bond number less than one-third, 502

Deterministic spectral modelling – Wave transformation models with exact second-order transfer, 659

Dialysis – Transitional flow field characterization inside an arteriovenous graft-to-vein anastomosis under pulsatile flow conditions, 353

Dipole-dipole – Forces acting on water droplets falling in oil under the influence of an electric field: numerical predictions versus experimental observations, 717

Discrete element method – Forces acting on water droplets falling in oil under the influence of an electric field: numerical predictions versus experimental observations, 717

Disk – Simulation of the rarefied gas flow around a perpendicular disk, 457

Droplets – Forces acting on water droplets falling in oil under the influence of an electric field: numerical predictions versus experimental observations, 717

Dusty gas – Strong shock waves generated by a piston moving in a dust-laden gas under isothermal conditions, 205

E

Effective viscosity – Orientation statistics and effective viscosity of suspensions of elongated particles in simple shear flow, 125

Electric field – Forces acting on water droplets falling in oil under the influence of an electric field: numerical predictions versus experimental observations, 717

Electromagnetic casting – Shaping of sessile liquid metal drops using high-frequency magnetic fields, 149

Elevation wave – Free surface flow under gravity and surface tension due to an applied pressure distribution II Bond number less than one-third, 502

Energy growth – Revisiting the stability of pulsatile pipe flow, 237

Eroding hump – Supersonic triple deck flow past an eroding hump, 448

Euler equations – The normal flux method at the boundary for multidimensional finite volume approximations in CFD, 1

Experiment – Transition from deep to shallow water layer: formation of vortex dipoles, 19 – Interactions between hard spheres sedimenting at low Reynolds number, 586

F

Fast Fourier Transform – Wave transformation models with exact second-order transfer, 659

Favourable pressure gradient – The influence of high free-stream turbulence and a favourable pressure gradient on an incompressible axisymmetric turbulent boundary layer, 167

Feedback – Proportional control of oscillatory thermocapillary convection in a toy model, 296

Film flow – An accurate modeling of thin film flows down an incline for inertia dominated regimes, 49

Film-thinning – Forces acting on water droplets falling in oil under the influence of an electric field: numerical predictions versus experimental observations, 717

Finite element method – Numerical study around the corotational

Maxwell model for the viscoelastic fluid flows, 733

Finite volumes – The normal flux method at the boundary for multidimensional finite volume approximations in CFD, 1

Finite-differences – Dam-break release of a gravity current in a stratified ambient, 642

Fluid mixtures – Mixture of fluids involving entropy gradients and acceleration waves in interfacial layers, 596

Fluid-structure interaction – Vortex-induced vibrations and waves under shear flow with a wake oscillator model, 478

Free flow front – Temperature distribution in a Newtonian fluid injected between two semi-infinite plates, 767

Free surface – Shaping of sessile liquid metal drops using high-frequency magnetic fields, 149 – An inverse modelling technique for glass forming by gravity sagging, 275

Front condition – On the slumping of high Reynolds number gravity currents in two-dimensional and axisymmetric configurations, 71

Fully dispersive wave theory – Wave transformation models with exact second-order transfer, 659

G

Galerkin projection – Revisiting the stability of pulsatile pipe flow, 237

Geothermal system – Transition to instability of the interface in geothermal systems, 491

Glass forming – An inverse modelling technique for glass forming by gravity sagging, 275

Gravity current – On the slumping of high Reynolds number gravity currents in two-dimensional and axisymmetric configurations, 71 – Dam-break release of a gravity current in a stratified ambient, 642

Gravity-capillary – Free surface flow under gravity and surface tension

due to an applied pressure distribution II Bond number less than one-third, 502

Growth rate – Does shear flow stabilize an immersed thread?, 379

H

Harmonic waves – Acoustic properties of a two-fluid compressible mixture with micro-inertia, 397

Helical pipe – Investigation of laminar flow in a helical pipe filled with a fluid saturated porous medium, 338

Helical symmetry – Vortex scenario and bubble generation in a cylindrical cavity with rotating top and bottom, 137

High free-stream turbulence – The influence of high free-stream turbulence and a favourable pressure gradient on an incompressible axisymmetric turbulent boundary layer, 167

Hurwitz's criterion – Does shear flow stabilize an immersed thread?, 379

Hydrodynamic interactions – Interactions between hard spheres sedimenting at low Reynolds number, 586

Hyperbolic Systems – The normal flux method at the boundary for multidimensional finite volume approximations in CFD, 1

I

Inclined flat plate – Asymmetric vortex shedding flow past an inclined flat plate at high incidence, 33

Inclined plane – An accurate modeling of thin film flows down an incline for inertia dominated regimes, 49

Inertial effects – Interactions between hard spheres sedimenting at low Reynolds number, 586

Injection moulding – Temperature distribution in a Newtonian fluid injected between two semi-infinite plates, 767

Instability wave – Experimental investigation of 3D acoustic receptivity of an airfoil boundary layer due to surface vibrations, 621

Interfacial layers – Mixture of fluids involving entropy gradients and ac-

celeration waves in interfacial layers, 596

Inverse problem – An inverse modelling technique for glass forming by gravity sagging, 275

Isothermal flow – Strong shock waves generated by a piston moving in a dust-laden gas under isothermal condition, 205

L

Lagrange's formalism – Drag force acting on a bubble in a cloud of compressible spherical bubbles at large Reynolds numbers, 468

Laminar flow – Investigation of laminar flow in a helical pipe filled with a fluid saturated porous medium, 338

Laser Doppler anemometer – Transitional flow field characterization inside an arteriovenous graft-to-vein anastomosis under pulsatile flow conditions, 353

Levich's approach – Drag force acting on a bubble in a cloud of compressible spherical bubbles at large Reynolds numbers, 468

Linear dynamics – A note on the use of one-dimensional models to describe the linear dynamics of liquid bridges, 288

Liquid bridge – A note on the use of one-dimensional models to describe the linear dynamics of liquid bridges, 288

Liquid metal – Surface waves created by low-frequency magnetic fields, 91 – Shaping of sessile liquid metal drops using high-frequency magnetic fields, 149

Liquid sheet – The dynamics of a moving sheet of liquid, part I: derivation of the 2D equations of motion, 555 – The dynamics of a moving sheet of liquid, part II: experiments, 572

Liquid thread – Does shear flow stabilize an immersed thread?, 379

Lock-in – Vortex-induced vibrations and waves under shear flow with a wake oscillator model, 478

M

Method of fundamental solutions – The method of fundamental solu-

tions for Stokes flow in a rectangular cavity with cylinders, 703

MHD – Surface waves created by low-frequency magnetic fields, 91

Mixing – Fluid mixing induced by vibrating walls, 366

Model – Proportional control of oscillatory thermocapillary convection in a toy model, 296

Monte Carlo simulation – Simulation of the rarefied gas flow around a perpendicular disk, 457

Moving boundary – Supersonic triple deck flow past an eroding hump, 448

N

Natural convection – Steady states, oscillations and heat explosion in a combustion problem with convection, 189

Near-wall layer – Velocity scales in the near-wall layer beneath reattaching turbulent separated and boundary layer flows, 425

NLS – Free surface flow under gravity and surface tension due to an applied pressure distribution II Bond number less than one-third, 502

Non-normality – Revisiting the stability of pulsatile pipe flow, 237

Nonlinear wave transformation – Wave transformation models with exact second-order transfer, 659

Nonlinear waves – A Fourier-Boussinesq method for nonlinear water waves, 255

Numerical solution – Supersonic triple deck flow past an eroding hump, 448

O

One-dimensional models – A note on the use of one-dimensional models to describe the linear dynamics of liquid bridges, 288

Orientation pdf – Orientation statistics and effective viscosity of suspensions of elongated particles in simple shear flow, 125

Orr-Sommerfeld operator – Revisiting the stability of pulsatile pipe flow, 237

Orthogonal helical coordinates – Investigation of laminar flow in a helical pipe filled with a fluid saturated porous medium, 338

Oscillatory convection – Steady states, oscillations and heat explosion in a combustion problem with convection, 189

P

Parametric resonance – Surface waves created by low-frequency magnetic fields, 91

Phase transition interface – Transition to instability of the interface in geothermal systems, 491

PIV – Asymmetric vortex shedding flow past an inclined flat plate at high incidence, 33

PIV-LIV method – Experimental evaluation of numerical simulation of cavitating flow around hydrofoil, 522

Porous medium – Investigation of laminar flow in a helical pipe filled with a fluid saturated porous medium, 338

Potential flow – Vortex pair and Chaplygin cusps, 328

Pulsatile pipe flow – Revisiting the stability of pulsatile pipe flow, 237

Q

Quasi-two-dimensional turbulence – Transition from deep to shallow water layer: formation of vortex dipoles, 19

R

Rarefied gas dynamics – Simulation of the rarefied gas flow around a perpendicular disk, 457 – A formulation of the linearized Boltzmann equations for a binary mixture of rigid spheres, 614

Receptivity coefficient – Experimental investigation of 3D acoustic receptivity of an airfoil boundary layer due to surface vibrations, 621

Rectangular cavity – The method of fundamental solutions for Stokes flow in a rectangular cavity with cylinders, 703

Rigid spheres – A formulation of the linearized Boltzmann equations for a binary mixture of rigid spheres, 614

Rotating cylinders – The method of fundamental solutions for Stokes flow in a rectangular cavity with cylinders, 703

S

Sedimentation – Interactions between hard spheres sedimenting at low Reynolds number, 586

Self-similar solution – Strong shock waves generated by a piston moving in a dust-laden gas under isothermal condition, 205

Separated flow – Vortex pair and Chaplygin cusps, 328

Sessile drop – Shaping of sessile liquid metal drops using high-frequency magnetic fields, 149

Shallow water – Transition from deep to shallow water layer: formation of vortex dipoles, 19

Shallow-water – Dam-break release of a gravity current in a stratified ambient, 642

Shallow-water equations – On the slumping of high Reynolds number gravity currents in two-dimensional and axisymmetric configurations, 71

Shear flow – Does shear flow stabilize an immersed thread?, 379

Simulation – Interactions between hard spheres sedimenting at low Reynolds number, 586

Single hydrofoil – Experimental evaluation of numerical simulation of cavitating flow around hydrofoil, 522

Slumping – On the slumping of high Reynolds number gravity currents in two-dimensional and axisymmetric configurations, 71

Stability – Revisiting the stability of pulsatile pipe flow, 237 – Acoustic properties of a two-fluid compressible mixture with micro-inertia, 397

Stability analysis – Does shear flow stabilize an immersed thread?, 379

Stationary waves – An accurate modeling of thin film flows down an incline for inertia dominated regimes, 49

Stenosis – Transitional flow field characterization inside an arteriovenous

graft-to-vein anastomosis under pulsatile flow conditions, 353

Stokeslet – The method of fundamental solutions for Stokes flow in a rectangular cavity with cylinders, 703

Stratified – Dam-break release of a gravity current in a stratified ambient, 642

Streaming – Fluid mixing induced by vibrating walls, 366

Strong shock waves – Strong shock waves generated by a piston moving in a dust-laden gas under isothermal condition, 205

Supersonic triple deck – Supersonic triple deck flow past an eroding hump, 448

Surface vibration – Experimental investigation of 3D acoustic receptivity of an airfoil boundary layer due to surface vibrations, 621

Suspensions – Orientation statistics and effective viscosity of suspensions of elongated particles in simple shear flow, 125

Swirl flows – Vortex scenario and bubble generation in a cylindrical cavity with rotating top and bottom, 137

T

Temperature distribution – Temperature distribution in a Newtonian fluid injected between two semi-infinite plates, 767

Thermal runaway – Steady states, oscillations and heat explosion in a combustion problem with convection, 189

Thermocapillary convection – Proportional control of oscillatory thermocapillary convection in a toy model, 296

Threshold of instability – Transition to instability of the interface in geothermal systems, 491

Time-dependent – The dynamics of a moving sheet of liquid, part I: derivation of the 2D equations of motion, 555

Transient – The dynamics of a moving sheet of liquid, part II: experiments, 572

Trapped bubble – Free surface flow under gravity and surface tension

due to an applied pressure distribution II Bond number less than one-third, 502

Trapped vortex – Vortex pair and Chaplygin cusps, 328

Turbulence – Transitional flow field characterization inside an arteriovenous graft-to-vein anastomosis under pulsatile flow conditions, 353

Turbulent boundary layer – The influence of high free-stream turbulence and a favourable pressure gradient on an incompressible axisymmetric turbulent boundary layer, 167
– Velocity scales in the near-wall layer beneath reattaching turbulent separated and boundary layer flows, 425

Turbulent separated flow – Velocity scales in the near-wall layer beneath reattaching turbulent separated and boundary layer flows, 425

Two fluid models – The normal flux method at the boundary for multidimensional finite volume approximations in CFD, 1

dimensional finite volume approximations in CFD, 1

U

Unsteady – Fluid mixing induced by vibrating walls, 366

V

Van der Pol – Vortex-induced vibrations and waves under shear flow with a wake oscillator model, 478

Vibrating – Fluid mixing induced by vibrating walls, 366

Viscoelastic flows – Numerical study around the corotational Maxwell model for the viscoelastic fluid flows, 733

Visualization – Experimental evaluation of numerical simulation of cavitating flow around hydrofoil, 522

VIV – Vortex-induced vibrations and waves under shear flow with a wake oscillator model, 478

VIW – Vortex-induced vibrations and waves under shear flow with a wake oscillator model, 478

Vortex breakdown – Vortex scenario and bubble generation in a cylindrical cavity with rotating top and bottom, 137

Vortex dipole – Transition from deep to shallow water layer: formation of vortex dipoles, 19

Vortex tubes – Revisiting the stability of pulsatile pipe flow, 237

Vortices – Asymmetric vortex shedding flow past an inclined flat plate at high incidence, 33

W

Waves – Fluid mixing induced by vibrating walls, 366