

# Stuart B Dalziel

## List of Publications by Year in descending order

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Version: 2024-02-01

99  
papers

3,729  
citations

159585

30  
h-index

138484

58  
g-index

104  
all docs

104  
docs citations

104  
times ranked

2261  
citing authors

| #  | ARTICLE   | IF  | CITATIONS |
|----|---|-----|-----------|
| 1  | Gravity currents produced by lock exchange. <i>Journal of Fluid Mechanics</i> , 2004, 521, 1-34.  | 3.4 | 337       |
| 2  | Whole-field density measurements by 'synthetic schlieren'. <i>Experiments in Fluids</i> , 2000, 28, 322-335.  | 2.4 | 291       |
| 3  | Effects of ventilation on the indoor spread of COVID-19. <i>Journal of Fluid Mechanics</i> , 2020, 903, F1.   | 3.4 | 283       |
| 4  | Self-similarity and internal structure of turbulence induced by Rayleigh-Taylor instability. <i>Journal of Fluid Mechanics</i> , 1999, 399, 1-48.   | 3.4 | 210       |
| 5  | Visualization and measurement of internal waves by "synthetic schlieren"™. Part 1. Vertically oscillating cylinder. <i>Journal of Fluid Mechanics</i> , 1999, 390, 93-126.                            | 3.4 | 155       |
| 6  | Mixing in lock-release gravity currents. <i>Dynamics of Atmospheres and Oceans</i> , 1996, 24, 183-195.   | 1.8 | 147       |
| 7  | Structure formation in homogeneous freely decaying rotating turbulence. <i>Journal of Fluid Mechanics</i> , 2008, 598, 81-105.  | 3.4 | 105       |
| 8  | Rayleigh-Taylor instability: experiments with image analysis. <i>Dynamics of Atmospheres and Oceans</i> , 1993, 20, 127-153.  | 1.8 | 103       |
| 9  | Two-layer hydraulics: a functional approach. <i>Journal of Fluid Mechanics</i> , 1991, 223, 135.  | 3.4 | 100       |
| 10 | On the evolution of eddies in a rapidly rotating system. <i>Journal of Fluid Mechanics</i> , 2006, 557, 135.  | 3.4 | 94        |
| 11 | Decay of rotating turbulence: some particle tracking experiments. <i>Flow, Turbulence and Combustion</i> , 1992, 49, 217-244.   | 0.2 | 80        |
| 12 | Dust resuspension by the flow around an impacting sphere. <i>Journal of Fluid Mechanics</i> , 2000, 403, 305-328.   | 3.4 | 68        |
| 13 | Simultaneous synthetic schlieren and PIV measurements for internal solitary waves. <i>Measurement Science and Technology</i> , 2007, 18, 533-547.   | 2.6 | 68        |
| 14 | Time-dependent plumes and jets with decreasing source strengths. <i>Journal of Fluid Mechanics</i> , 2006, 563, 443.  | 3.4 | 59        |
| 15 | Mixing efficiency in high-aspect-ratio Rayleigh-Taylor experiments. <i>Physics of Fluids</i> , 2008, 20, .  | 4.0 | 59        |
| 16 | Efficient mixing in stratified flows: experimental study of a Rayleigh-Taylor unstable interface within an otherwise stable stratification. <i>Journal of Fluid Mechanics</i> , 2014, 756, 1027-1057. | 3.4 | 55        |
| 17 | Observations on the wavenumber spectrum and evolution of an internal wave attractor. <i>Journal of Fluid Mechanics</i> , 2008, 598, 373-382.  | 3.4 | 53        |
| 18 | A study of three-dimensional gravity currents on a uniform slope. <i>Journal of Fluid Mechanics</i> , 2002, 453, 239-261.   | 3.4 | 50        |

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|----|---|-----|-----------|
| 19 | Sediment resuspension and erosion by vortex rings. <i>Physics of Fluids</i> , 2009, 21, .   | 4.0 | 50        |
| 20 | Small Atwood number Rayleigh-Taylor experiments. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2010, 368, 1663-1679. | 3.4 | 48        |
| 21 | Bubble size distribution in dissolved air flotation tanks. <i>Journal of Water Supply: Research and Technology - AQUA</i> , 2004, 53, 531-543.                        | 1.4 | 45        |
| 22 | Vortical motion in the head of an axisymmetric gravity current. <i>Physics of Fluids</i> , 2006, 18, 046601.  | 4.0 | 42        |
| 23 | The hydraulics of doorway exchange flows. <i>Building and Environment</i> , 1991, 26, 121-135.  | 6.9 | 41        |
| 24 | Rayleigh-Taylor mixing in an otherwise stable stratification. <i>Journal of Fluid Mechanics</i> , 2011, 688, 507-527.   | 3.4 | 38        |
| 25 | The structure of the head of an inertial gravity current determined by particle-tracking velocimetry. <i>Experiments in Fluids</i> , 2003, 34, 708-716.               | 2.4 | 37        |
| 26 | The synthesis of di-carboxylate esters using continuous flow vortex fluidics. <i>Green Chemistry</i> , 2016, 18, 2193-2200.   | 9.0 | 37        |
| 27 | Rayleigh-Taylor instability in complex stratifications. <i>Journal of Fluid Mechanics</i> , 2005, 542, 251.   | 3.4 | 36        |
| 28 | The structure and origin of confined Holmboe waves. <i>Journal of Fluid Mechanics</i> , 2018, 848, 508-544.   | 3.4 | 36        |
| 29 | Saline and particle-driven interfacial intrusions. <i>Journal of Fluid Mechanics</i> , 1999, 389, 303-334.  | 3.4 | 35        |
| 30 | Source-sink turbulence in a rotating stratified fluid. <i>Journal of Fluid Mechanics</i> , 1995, 298, 81-112.   | 3.4 | 30        |
| 31 | Maximal Exchange in Channels with Nonrectangular Cross Sections. <i>Journal of Physical Oceanography</i> , 1992, 22, 1188-1206.                                       | 1.7 | 29        |
| 32 | Fluid displacement by Stokes flow past a spherical droplet. <i>Journal of Fluid Mechanics</i> , 2003, 485, 67-85.   | 3.4 | 27        |
| 33 | Time-dependent mixing in stratified Kelvin-Helmholtz billows: Experimental observations. <i>Geophysical Research Letters</i> , 2006, 33, .                            | 4.0 | 27        |
| 34 | Continuous flow Fischer esterifications harnessing vibrational-coupled thin film fluidics. <i>RSC Advances</i> , 2015, 5, 1655-1660.                                  | 3.6 | 26        |
| 35 | Internal wave fields generated by a translating body in a stratified fluid: an experimental comparison. <i>Journal of Fluid Mechanics</i> , 2006, 564, 305.           | 3.4 | 25        |
| 36 | Turbulent diffusion in tall tubes. I. Models for Rayleigh-Taylor instability. <i>Physics of Fluids</i> , 2011, 23, 085109.  | 4.0 | 25        |

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|----|--|-----|-----------|
| 37 | On the meaning of mixing efficiency for buoyancy-driven mixing in stratified turbulent flows. <i>Journal of Fluid Mechanics</i> , 2015, 781, 261-275.                                    | 3.4 | 25        |
| 38 | Internal waves revisited. <i>Dynamics of Atmospheres and Oceans</i> , 2000, 31, 209-232.   | 1.8 | 23        |
| 39 | Internal wave fields and drag generated by a translating body in a stratified fluid. <i>Journal of Fluid Mechanics</i> , 2004, 498, 289-313.   | 3.4 | 23        |
| 40 | Tomographic reconstruction of internal wave patterns in a paraboloid. <i>Experiments in Fluids</i> , 2011, 50, 247-258.  | 2.4 | 23        |
| 41 | Electrical measurement of sediment layer thickness under suspension flows. <i>Experiments in Fluids</i> , 1999, 26, 470-474.   | 2.4 | 22        |
| 42 | Axisymmetric gravity currents on a cone. <i>Journal of Fluid Mechanics</i> , 2006, 565, 227.   | 3.4 | 22        |
| 43 | Boussinesq plumes and jets with decreasing source strengths in stratified environments. <i>Journal of Fluid Mechanics</i> , 2006, 563, 463.  | 3.4 | 22        |
| 44 | Attenuation technique for measuring sediment displacement levels. <i>Experiments in Fluids</i> , 2005, 39, 602-613.  | 2.4 | 21        |
| 45 | Comparison of laboratory and numerically observed scalar fields of an internal wave attractor. <i>European Journal of Mechanics, B/Fluids</i> , 2011, 30, 51-56.                         | 2.5 | 21        |
| 46 | Measurements of layer depth during baroclinic instability in a two-layer flow. <i>Flow, Turbulence and Combustion</i> , 1996, 56, 191-207.   | 0.2 | 20        |
| 47 | Rayleigh-Taylor instability at a tilted interface in laboratory experiments and numerical simulations. <i>Laser and Particle Beams</i> , 2003, 21, 419-423.                              | 1.0 | 20        |
| 48 | A dynamic masking technique for combined measurements of PIV and synthetic schlieren applied to internal gravity waves. <i>Measurement Science and Technology</i> , 2005, 16, 1954-1960. | 2.6 | 20        |
| 49 | Observations on the robustness of internal wave attractors to perturbations. <i>Physics of Fluids</i> , 2010, 22, .  | 4.0 | 20        |
| 50 | Source-sink turbulence in a stratified fluid. <i>Journal of Fluid Mechanics</i> , 1994, 261, 273-303.  | 3.4 | 19        |
| 51 | Resuspension onset and crater erosion by a vortex ring interacting with a particle layer. <i>Physics of Fluids</i> , 2012, 24, .   | 4.0 | 18        |
| 52 | Three-dimensional visualization of the interaction of a vortex ring with a stratified interface. <i>Journal of Fluid Mechanics</i> , 2017, 820, 549-579.                                 | 3.4 | 18        |
| 53 | Metal-silicate mixing by large Earth-forming impacts. <i>Earth and Planetary Science Letters</i> , 2021, 564, 116888.  | 4.4 | 18        |
| 54 | The evolution of a stratified turbulent cloud. <i>Journal of Fluid Mechanics</i> , 2014, 739, 229-253.   | 3.4 | 17        |

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|----|--|-----|-----------|
| 55 | Particle image velocimetry and modelling of horizontal coherent liquid jets impinging on and draining down a vertical wall. <i>Experimental Thermal and Fluid Science</i> , 2016, 74, 429-443. | 2.7 | 17        |
| 56 | A versatile scanning method for volumetric measurements of velocity and density fields. <i>Measurement Science and Technology</i> , 2019, 30, 055203.  | 2.6 | 17        |
| 57 | A light attenuation technique for void fraction measurement of microbubbles. <i>Experiments in Fluids</i> , 2001, 30, 214-220.   | 2.4 | 16        |
| 58 | Temporal variation of non-ideal plumes with sudden reductions in buoyancy flux. <i>Journal of Fluid Mechanics</i> , 2008, 600, 181-199.  | 3.4 | 15        |
| 59 | Inclined gravity currents filling basins: the impact of peeling detrainment on transport and vertical structure. <i>Journal of Fluid Mechanics</i> , 2017, 820, 400-423.                       | 3.4 | 15        |
| 60 | The drag on a vertically moving grid of bars in a linearly stratified fluid. <i>Experiments in Fluids</i> , 2003, 34, 678-686.   | 2.4 | 14        |
| 61 | Turbulent diffusion in tall tubes. II. Confinement by stratification. <i>Physics of Fluids</i> , 2011, 23, 085110.   | 4.0 | 13        |
| 62 | Bedload transport by a vertical jet impinging upon sediments. <i>Physics of Fluids</i> , 2014, 26, .   | 4.0 | 13        |
| 63 | Vortex-ring-induced stratified mixing. <i>Journal of Fluid Mechanics</i> , 2015, 781, 113-126.   | 3.4 | 13        |
| 64 | Numerical modelling of two-dimensional and axisymmetric gravity currents. <i>International Journal for Numerical Methods in Fluids</i> , 2005, 47, 1221-1227.                                  | 1.6 | 12        |
| 65 | Anticyclonic precession of a plume in a rotating environment. <i>Geophysical Research Letters</i> , 2017, 44, 9400-9407.   | 4.0 | 12        |
| 66 | Air Flow Experiments on a Train Carriage – Towards Understanding the Risk of Airborne Transmission. <i>Atmosphere</i> , 2021, 12, 1267.  | 2.3 | 12        |
| 67 | A pattern matching technique for measuring sediment displacement levels. <i>Experiments in Fluids</i> , 2004, 37, 399-408.   | 2.4 | 11        |
| 68 | Local implications for self-similar turbulent plume models. <i>Journal of Fluid Mechanics</i> , 2007, 575, 257-265.  | 3.4 | 11        |
| 69 | The structure of low-Froude-number lee waves over an isolated obstacle. <i>Journal of Fluid Mechanics</i> , 2011, 689, 3-31.   | 3.4 | 11        |
| 70 | Neutron imaging and modelling inclined vortex driven thin films. <i>Scientific Reports</i> , 2019, 9, 2817.  | 3.3 | 11        |
| 71 | Experimental investigations of quasi-two-dimensional vortices in a stratified fluid with source sink forcing. <i>Journal of Fluid Mechanics</i> , 1999, 383, 249-283.                          | 3.4 | 10        |
| 72 | An experimental study of the bulk properties of vortex rings translating through a stratified fluid. <i>European Journal of Mechanics, B/Fluids</i> , 2006, 25, 302-320.                       | 2.5 | 10        |

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|----|---|-----|-----------|
| 73 | Evolution of the Leading-Edge Vortex over an Accelerating Rotating Wing. <i>Procedia IUTAM</i> , 2013, 7, 233-242.  | 1.2 | 10        |
| 74 | Cleaning of viscous drops on a flat inclined surface using gravity-driven film flows. <i>Food and Bioproducts Processing</i> , 2015, 93, 310-317.   | 3.6 | 10        |
| 75 | Vortex rings impinging on permeable boundaries. <i>Physics of Fluids</i> , 2015, 27, .  | 4.0 | 10        |
| 76 | Using stratification to mitigate end effects in quasi-Keplerian Taylor-Couette flow. <i>Journal of Fluid Mechanics</i> , 2016, 791, 608-630.  | 3.4 | 10        |
| 77 | Particle organization after viscous sedimentation in tilted containers. <i>Physics of Fluids</i> , 2016, 28, .  | 4.0 | 9         |
| 78 | Resuspension by saline and particle-driven gravity currents. <i>Journal of Geophysical Research</i> , 2001, 106, 14095-14111.   | 3.3 | 8         |
| 79 | Simultaneous particle image velocimetry and synthetic schlieren measurements of an erupting thermal plume. <i>Measurement Science and Technology</i> , 2009, 20, 125402.                    | 2.6 | 8         |
| 80 | Convective mass transfer from a submerged drop in a thin falling film. <i>Journal of Fluid Mechanics</i> , 2016, 789, 630-668.  | 3.4 | 8         |
| 81 | Inclined gravity currents filling basins: The influence of Reynolds number on entrainment into gravity currents. <i>Physics of Fluids</i> , 2015, 27, 096602.                               | 4.0 | 7         |
| 82 | The granular Blasius problem. <i>Journal of Fluid Mechanics</i> , 2019, 872, 784-817.   | 3.4 | 7         |
| 83 | Turbulent jets with off-source heating. <i>Journal of Fluid Mechanics</i> , 2017, 824, 766-784.   | 3.4 | 6         |
| 84 | Vortex-ring-induced stratified mixing: mixing model. <i>Journal of Fluid Mechanics</i> , 2018, 837, 129-146.  | 3.4 | 6         |
| 85 | The magic carpet: an arbitrary spectrum wave maker for internal waves. <i>Experiments in Fluids</i> , 2019, 60, 1.  | 2.4 | 6         |
| 86 | Harmonics from a magic carpet. <i>Journal of Fluid Mechanics</i> , 2021, 911, .   | 3.4 | 6         |
| 87 | Bursting water balloons. <i>Journal of Fluid Mechanics</i> , 2014, 756, 771-815.  | 3.4 | 5         |
| 88 | Experimental evidence of internal wave attractor signatures hidden in large-amplitude multi-frequency wave fields. <i>Journal of Fluid Mechanics</i> , 2021, 915, .                         | 3.4 | 5         |
| 89 | Synthetic schlieren: Determination of the density gradient generated by internal waves propagating in a stratified fluid. <i>Journal of Physics: Conference Series</i> , 2009, 166, 012007. | 0.4 | 4         |
| 90 | The twists and turns of rotating turbulence. <i>Journal of Fluid Mechanics</i> , 2011, 666, 1-4.  | 3.4 | 4         |

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|----|--|-----|-----------|
| 91 | Interaction between the Blasius boundary layer and a free surface. Journal of Fluid Mechanics, 2018, 839, .                        | 3.4 | 4         |
| 92 | A hierarchical decomposition of internal wave fields. Journal of Fluid Mechanics, 2022, 934, .                                     | 3.4 | 4         |
| 93 | Experimental studies of rotating exchange flow. Deep-Sea Research Part I: Oceanographic Research Papers, 2007, 54, 269-291.        | 1.4 | 3         |
| 94 | Rayleighâ€“Taylor instability between unequally stratified layers. Physica D: Nonlinear Phenomena, 2021, 423, 132907.              | 2.8 | 3         |
| 95 | Effects of background rotation on the dynamics of multiphase plumes. Journal of Fluid Mechanics, 2021, 915, .                      | 3.4 | 2         |
| 96 | Particle resuspension by an impacting vortex ring. , 2003, , 105-108.  |     | 2         |
| 97 | A new nozzle for dissolved air flotation. Water Science and Technology: Water Supply, 2009, 9, 611-617.                            | 2.1 | 1         |
| 98 | On the Large Scale Evolution of Rotating Turbulence. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2008, , 391-396. | 0.2 | 0         |
| 99 | Observations on Rapidly Rotating Turbulence. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2010, , 95-104.          | 0.2 | 0         |