

Meheboob Alam

List of Publications by Year in descending order

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73
papers

1,453
citations

257357

24
h-index

360920

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74
all docs

74
docs citations

74
times ranked

551
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 1 | Rheology of bidisperse granular mixtures via event-driven simulations. <i>Journal of Fluid Mechanics</i> , 2003, 476, 69-103. | 1.4 | 85 |
| 2 | First normal stress difference and crystallization in a dense sheared granular fluid. <i>Physics of Fluids</i> , 2003, 15, 2298-2312. | 1.6 | 72 |
| 3 | Segregation in a fluidized binary granular mixture: Competition between buoyancy and geometric forces. <i>Europhysics Letters</i> , 2003, 64, 190-196. | 0.7 | 70 |
| 4 | Onset of Convection in Strongly Shaken Granular Matter. <i>Physical Review Letters</i> , 2010, 104, 038001. | 2.9 | 63 |
| 5 | Stability of plane Couette flow of a granular material. <i>Journal of Fluid Mechanics</i> , 1998, 377, 99-136. | 1.4 | 59 |
| 6 | Kinetic theory of a binary mixture of nearly elastic disks with size and mass disparity. <i>Physics of Fluids</i> , 2002, 14, 4085-4087. | 1.6 | 49 |
| 7 | The effect of boundaries on the plane Couette flow of granular materials: a bifurcation analysis. <i>Journal of Fluid Mechanics</i> , 1999, 397, 203-229. | 1.4 | 42 |
| 8 | Energy nonequipartition, rheology, and microstructure in sheared bidisperse granular mixtures. <i>Physics of Fluids</i> , 2005, 17, 063303. | 1.6 | 42 |
| 9 | The influence of friction on the stability of unbounded granular shear flow. <i>Journal of Fluid Mechanics</i> , 1997, 343, 267-301. | 1.4 | 40 |
| 10 | Algebraic and exponential instabilities in a sheared micropolar granular fluid. <i>Journal of Fluid Mechanics</i> , 2006, 567, 195. | 1.4 | 39 |
| 11 | Athermal jamming of soft frictionless Platonic solids. <i>Physical Review E</i> , 2010, 82, 051304. | 0.8 | 39 |
| 12 | Observations on transition in plane bubble plumes. <i>Journal of Fluid Mechanics</i> , 1993, 254, 363-374. | 1.4 | 36 |
| 13 | SHEAR-FLOW AND MATERIAL INSTABILITIES IN PARTICULATE SUSPENSIONS AND GRANULAR MEDIA. <i>Particulate Science and Technology</i> , 1999, 17, 69-96. | 1.1 | 35 |
| 14 | Hydrodynamic theory for reverse brazil nut segregation and the non-monotonic ascension dynamics. <i>Journal of Statistical Physics</i> , 2006, 124, 587-623. | 0.5 | 34 |
| 15 | Normal stress differences, their origin and constitutive relations for a sheared granular fluid. <i>Journal of Fluid Mechanics</i> , 2016, 795, 549-580. | 1.4 | 33 |
| 16 | How good is the equipartition assumption for the transport properties of a granular mixture?. <i>Granular Matter</i> , 2002, 4, 139-142. | 1.1 | 30 |
| 17 | Isostaticity of constraints in amorphous jammed systems of soft frictionless Platonic solids. <i>Physical Review E</i> , 2011, 84, 030301. | 0.8 | 30 |
| 18 | Variable-cell method for stress-controlled jamming of athermal, frictionless grains. <i>Physical Review E</i> , 2014, 89, 042203. | 0.8 | 30 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 19 | Linear stability, transient energy growth, and the role of viscosity stratification in compressible plane Couette flow. <i>Physical Review E</i> , 2008, 77, 036322. | 0.8 | 29 |
| 20 | Rheology of Two- and Three-dimensional Granular Mixtures Under Uniform Shear Flow: Enskog Kinetic Theory Versus Molecular Dynamics Simulations. <i>Granular Matter</i> , 2006, 8, 103-115. | 1.1 | 28 |
| 21 | Non-Newtonian stress, collisional dissipation and heat flux in the shear flow of inelastic disks: a reduction via Grad's moment method. <i>Journal of Fluid Mechanics</i> , 2014, 757, 251-296. | 1.4 | 28 |
| 22 | Inelastic collapse in simple shear flow of a granular medium. <i>Physical Review E</i> , 2001, 63, 061308. | 0.8 | 27 |
| 23 | Instability-induced ordering, universal unfolding and the role of gravity in granular Couette flow. <i>Journal of Fluid Mechanics</i> , 2005, 523, 277-306. | 1.4 | 27 |
| 24 | Suspension Taylor-Couette flow: co-existence of stationary and travelling waves, and the characteristics of Taylor vortices and spirals. <i>Journal of Fluid Mechanics</i> , 2019, 870, 901-940. | 1.4 | 25 |
| 25 | Universality of shear-banding instability and crystallization in sheared granular fluid. <i>Journal of Fluid Mechanics</i> , 2008, 615, 293-321. | 1.4 | 24 |
| 26 | Revisiting ignited-quenched transition and the non-Newtonian rheology of a sheared dilute gas-solid suspension. <i>Journal of Fluid Mechanics</i> , 2017, 833, 206-246. | 1.4 | 23 |
| 27 | Orientalional Correlation and Velocity Distributions in Uniform Shear Flow of a Dilute Granular Gas. <i>Physical Review Letters</i> , 2008, 100, 068002. | 2.9 | 22 |
| 28 | Slip velocity and stresses in granular Poiseuille flow via event-driven simulation. <i>Physical Review E</i> , 2009, 80, 021303. | 0.8 | 21 |
| 29 | Buoyancy driven convection in vertically shaken granular matter: experiment, numerics, and theory. <i>Granular Matter</i> , 2013, 15, 893-911. | 1.1 | 21 |
| 30 | Weakly nonlinear theory of shear-banding instability in a granular plane Couette flow: analytical solution, comparison with numerics and bifurcation. <i>Journal of Fluid Mechanics</i> , 2011, 666, 204-253. | 1.4 | 20 |
| 31 | Nonmodal energy growth and optimal perturbations in compressible plane Couette flow. <i>Physics of Fluids</i> , 2006, 18, 034103. | 1.6 | 19 |
| 32 | Landau-type Order Parameter Equation for Shear Banding in Granular Couette Flow. <i>Physical Review Letters</i> , 2009, 103, 068001. | 2.9 | 18 |
| 33 | Nonlinear stability and patterns in granular plane Couette flow: Hopf and pitchfork bifurcations, and evidence for resonance. <i>Journal of Fluid Mechanics</i> , 2011, 672, 147-195. | 1.4 | 17 |
| 34 | Streamwise structures and density patterns in rapid granular Couette flow: a linear stability analysis. <i>Journal of Fluid Mechanics</i> , 2006, 553, 1. | 1.4 | 16 |
| 35 | Velocity distribution function and correlations in a granular Poiseuille flow. <i>Journal of Fluid Mechanics</i> , 2010, 653, 175-219. | 1.4 | 16 |
| 36 | Interpenetrating spiral vortices and other coexisting states in suspension Taylor-Couette flow. <i>Physical Review Fluids</i> , 2020, 5, . | 1.0 | 16 |

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|----|---|-----|-----------|
| 37 | Velocity distribution and the effect of wall roughness in granular Poiseuille flow. <i>Physical Review E</i> , 2007, 75, 051306. | 0.8 | 15 |
| 38 | Burnett-order constitutive relations, second moment anisotropy and co-existing states in sheared dense gas–solid suspensions. <i>Journal of Fluid Mechanics</i> , 2020, 887, . | 1.4 | 14 |
| 39 | On Knudsen-minimum effect and temperature bimodality in a dilute granular Poiseuille flow. <i>Journal of Fluid Mechanics</i> , 2015, 782, 99-126. | 1.4 | 13 |
| 40 | Hydrodynamics, wall-slip, and normal-stress differences in rarefied granular Poiseuille flow. <i>Physical Review E</i> , 2017, 95, 022903. | 0.8 | 13 |
| 41 | Higher-order effects on orientational correlation and relaxation dynamics in homogeneous cooling of a rough granular gas. <i>Physical Review E</i> , 2014, 89, 062201. | 0.8 | 12 |
| 42 | Nonlinear instability and convection in a vertically vibrated granular bed. <i>Journal of Fluid Mechanics</i> , 2014, 761, 123-167. | 1.4 | 11 |
| 43 | Density waves and the effect of wall roughness in granular Poiseuille flow: Simulation and linear stability. <i>European Physical Journal: Special Topics</i> , 2009, 179, 69-90. | 1.2 | 10 |
| 44 | Plane shock waves and Haff’s law in a granular gas. <i>Journal of Fluid Mechanics</i> , 2015, 779, . | 1.4 | 10 |
| 45 | Pattern transition, microstructure, and dynamics in a two-dimensional vibrofluidized granular bed. <i>Physical Review E</i> , 2016, 93, 052901. | 0.8 | 10 |
| 46 | Unified theory for a sheared gas–solid suspension: from rapid granular suspension to its small-Stokes-number limit. <i>Journal of Fluid Mechanics</i> , 2019, 870, 1175-1193. | 1.4 | 9 |
| 47 | Patterns and velocity field in vertically vibrated granular materials. <i>AIP Conference Proceedings</i> , 2013, , . | 0.3 | 8 |
| 48 | Effect of Coulomb friction on orientational correlation and velocity distribution functions in a sheared dilute granular gas. <i>Physical Review E</i> , 2011, 84, 021304. | 0.8 | 7 |
| 49 | Nonlinear vorticity-banding instability in granular plane Couette flow: higher-order Landau coefficients, bistability and the bifurcation scenario. <i>Journal of Fluid Mechanics</i> , 2013, 718, 131-180. | 1.4 | 7 |
| 50 | Disentangling the role of athermal walls on the Knudsen paradox in molecular and granular gases. <i>Physical Review E</i> , 2018, 97, 012912. | 0.8 | 7 |
| 51 | Effects of Prandtl number and a new instability mode in a plane thermal plume. <i>Journal of Fluid Mechanics</i> , 2007, 592, 221-231. | 1.4 | 6 |
| 52 | Normal stress differences and beyond-Navier-Stokes hydrodynamics. <i>EPJ Web of Conferences</i> , 2017, 140, 11014. | 0.1 | 6 |
| 53 | Asymptotic expansion and Padé approximants for acceleration-driven Poiseuille flow of a rarefied gas: Bulk hydrodynamics and rheology. <i>Physical Review E</i> , 2018, 98, 012115. | 0.8 | 6 |
| 54 | Symmetry-breaking bifurcations and hysteresis in compressible Taylor–Couette flow of a dense gas: a molecular dynamics study. <i>Journal of Fluid Mechanics</i> , 2020, 902, . | 1.4 | 6 |

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|----|--|-----|-----------|
| 55 | Nonlinear stability, bifurcation and vortical patterns in three-dimensional granular plane Couette flow. <i>Journal of Fluid Mechanics</i> , 2013, 716, 349-413. | 1.4 | 5 |
| 56 | Shock waves in a dilute granular gas. , 2014, , . | | 5 |
| 57 | Phase-coexisting patterns, horizontal segregation, and controlled convection in vertically vibrated binary granular mixtures. <i>Physical Review E</i> , 2018, 97, 012911. | 0.8 | 5 |
| 58 | Asymptotic expansion and Padé approximants for gravity-driven flow of a heated granular gas: Competition between inelasticity and forcing, up to Burnett order. <i>Physical Review E</i> , 2018, 98, . | 0.8 | 5 |
| 59 | Nonlinear axisymmetric Taylor-Couette flow in a dilute gas: multiroll transition and the role of compressibility. <i>Journal of Fluid Mechanics</i> , 2021, 908, . | 1.4 | 5 |
| 60 | Regularized extended-hydrodynamic equations for a rarefied granular gas and the plane shock waves. <i>Physical Review Fluids</i> , 2020, 5, . | 1.0 | 5 |
| 61 | Singular behavior of the stresses in the limit of random close packing in collisional, simple shearing flows of frictionless spheres. <i>Physical Review Fluids</i> , 2020, 5, . | 1.0 | 5 |
| 62 | Counter-rotating suspension Taylor-Couette flow: pattern transition, flow multiplicity and the spectral evolution. <i>Journal of Fluid Mechanics</i> , 2022, 944, . | 1.4 | 5 |
| 63 | Origin of subcritical shear-banding instability in a dense two-dimensional sheared granular fluid. <i>Granular Matter</i> , 2012, 14, 221-227. | 1.1 | 4 |
| 64 | Plane shock wave structure in a dilute granular gas. <i>AIP Conference Proceedings</i> , 2016, , . | 0.3 | 4 |
| 65 | Non-Modal Stability and Optimal Perturbations in Unbounded Granular Shear Flow: Three-Dimensionality and Particle Spin. <i>Progress of Theoretical Physics Supplement</i> , 2012, 195, 78-100. | 0.2 | 3 |
| 66 | Quasi-static Compaction of Polyhedra by the Discrete Element Method. , 2009, , . | | 2 |
| 67 | Shear-induced heat transport and the relevance of generalized Fourier's law in granular Poiseuille flow. <i>Physical Review Fluids</i> , 2021, 6, . | 1.0 | 2 |
| 68 | Instabilities and patterns in horizontally oscillating particulate suspension. <i>Physical Review E</i> , 2008, 77, 041305. | 0.8 | 1 |
| 69 | Oblique shock waves in granular flows over bluff bodies. <i>EPJ Web of Conferences</i> , 2017, 140, 03053. | 0.1 | 1 |
| 70 | Multiplicity of states in Taylor-Couette flow of a dense granular gas. <i>EPJ Web of Conferences</i> , 2021, 249, 03015. | 0.1 | 1 |
| 71 | Shearbanding and inhomogeneous states in granular fluid. , 2013, , . | | 0 |
| 72 | Bulk hydrodynamics and rheology of gravity-driven Poiseuille flow: A comparative study between Maxwell molecules and hard spheres. <i>AIP Conference Proceedings</i> , 2019, , . | 0.3 | 0 |

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|----|---|-----|-----------|
| 73 | Poiseuille flow of a dilute binary granular mixture: hydrodynamics and segregation. Granular Matter, 2019, 21, 1. | 1.1 | 0 |