

# Eric B Herbold

## List of Publications by Year in descending order

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Version: 2024-02-01

60  
papers

2,191  
citations

331670

21  
h-index

214800

47  
g-index

62  
all docs

62  
docs citations

62  
times ranked

1062  
citing authors

#	ARTICLE	IF	CITATIONS
1	Tunability of solitary wave properties in one-dimensional strongly nonlinear phononic crystals. <i>Physical Review E</i> , 2006, 73, 026610.	2.1	272
2	Anomalous Wave Reflection at the Interface of Two Strongly Nonlinear Granular Media. <i>Physical Review Letters</i> , 2005, 95, 158702.	7.8	260
3	Strongly nonlinear waves in a chain of Teflon beads. <i>Physical Review E</i> , 2005, 72, 016603.	2.1	255
4	Energy Trapping and Shock Disintegration in a Composite Granular Medium. <i>Physical Review Letters</i> , 2006, 96, 058002.	7.8	242
5	Pulse propagation in a linear and nonlinear diatomic periodic chain: effects of acoustic frequency band-gap. <i>Acta Mechanica</i> , 2009, 205, 85-103.	2.1	137
6	Particle size effect on strength, failure, and shock behavior in polytetrafluoroethylene-Al-W granular composite materials. <i>Journal of Applied Physics</i> , 2008, 104, .	2.5	113
7	Highly nonlinear solitary waves in heterogeneous periodic granular media. <i>Physica D: Nonlinear Phenomena</i> , 2009, 238, 666-676.	2.8	105
8	Highly nonlinear solitary waves in periodic dimer granular chains. <i>Physical Review E</i> , 2008, 77, 015601.	2.1	103
9	Shock wave structure in a strongly nonlinear lattice with viscous dissipation. <i>Physical Review E</i> , 2007, 75, 021304.	2.1	79
10	Field- $\epsilon$ gradient partitioning for fracture and frictional contact in the material point method. <i>International Journal for Numerical Methods in Engineering</i> , 2017, 109, 1013-1044.	2.8	58
11	In situ grain fracture mechanics during uniaxial compaction of granular solids. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 112, 273-290.	4.8	57
12	The influence of metallic particle size on the mechanical properties of polytetrafluoroethylene-Al-W powder composites. <i>Applied Physics Letters</i> , 2008, 92, .	3.3	42
13	Propagation of Rarefaction Pulses in Discrete Materials with Strain-Softening Behavior. <i>Physical Review Letters</i> , 2013, 110, 144101.	7.8	41
14	Solitary and shock waves in discrete strongly nonlinear double power-law materials. <i>Applied Physics Letters</i> , 2007, 90, 261902.	3.3	36
15	Particle rotations and energy dissipation during mechanical compression of granular materials. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 129, 19-38.	4.8	30
16	Characterization of the crystal structure, kinematics, stresses and rotations in angular granular quartz during compaction. <i>Journal of Applied Crystallography</i> , 2018, 51, 1021-1034.	4.5	26
17	Effects of processing and powder size on microstructure and reactivity in arrested reactive milled Al+Ni. <i>Acta Materialia</i> , 2011, 59, 6717-6728.	7.9	25
18	Observation of a minimum reaction initiation threshold in ball-milled Ni+Al under high-rate mechanical loading. <i>Journal of Applied Physics</i> , 2011, 109, .	2.5	24

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19	A weighted Nitsche stabilized method for small-sliding contact on frictional surfaces. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2015, 283, 763-781.	6.6	24
20	Meso-scale framework for modeling granular material using computed tomography. <i>Computers and Geotechnics</i> , 2016, 76, 140-146.	4.7	24
21	Shock equation of state of multi-constituent epoxy-metal particulate composites. <i>Journal of Applied Physics</i> , 2011, 109, .	2.5	22
22	Linking initial microstructure and local response during quasistatic granular compaction. <i>Physical Review E</i> , 2017, 96, 012905.	2.1	18
23	Mesoscale model and X-ray computed micro-tomographic imaging of damage progression in ultra-high-performance concrete. <i>Cement and Concrete Research</i> , 2022, 157, 106799.	11.0	15
24	Finite element analyses of single particle crushing tests incorporating computed tomography imaging and damage mechanics. <i>Computers and Geotechnics</i> , 2019, 115, 103158.	4.7	14
25	The influence of packing structure and interparticle forces on ultrasound transmission in granular media. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 16234-16242.	7.1	13
26	Influence of Controlled Viscous Dissipation on the Propagation of Strongly Nonlinear Waves in Stainless Steel Based Phononic Crystals. <i>AIP Conference Proceedings</i> , 2006, , .	0.4	12
27	<i>In situ</i> X-ray imaging of heterogeneity in dynamic compaction of granular media. <i>Journal of Applied Physics</i> , 2019, 125, .	2.5	11
28	The role of dissipation on wave shape and attenuation in granular chains. <i>Physics Procedia</i> , 2010, 3, 465-471.	1.2	10
29	Asteroid Diversion Considerations and Comparisons of Diversion Techniques. <i>Procedia Engineering</i> , 2015, 103, 466-474.	1.2	10
30	Quantifying local rearrangements in three-dimensional granular materials: Rearrangement measures, correlations, and relationship to stresses. <i>Physical Review E</i> , 2022, 105, 014904.	2.1	10
31	Influence of Mechanical Properties Relevant to Standoff Deflection of Hazardous Asteroids. <i>Procedia Engineering</i> , 2013, 58, 251-259.	1.2	9
32	A thermomechanical breakage model for shock-loaded granular media. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 137, 103813.	4.8	9
33	A continuum model for concrete informed by mesoscale studies. <i>International Journal of Damage Mechanics</i> , 2018, 27, 1451-1481.	4.2	8
34	A description of structured waves in shock compressed particulate composites. <i>Journal of Applied Physics</i> , 2020, 127, .	2.5	8
35	EXPLOSIVE COMPATONS OF INTERMETALLIC-FORMING POWDER MIXTURES FOR FABRICATING STRUCTURAL ENERGETIC MATERIALS. <i>AIP Conference Proceedings</i> , 2009, , .	0.4	7
36	Simulations of Defense Strategies for Bennu: Material Characterization and Impulse Delivery. <i>Procedia Engineering</i> , 2015, 103, 173-180.	1.2	7

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37	Hugoniot Measurements Utilizing In Situ Synchrotron X-ray Radiation. Journal of Dynamic Behavior of Materials, 2019, 5, 93-104.	1.7	7
38	Periodic waves in a Hertzian chain. Physics Procedia, 2010, 3, 457-463.	1.2	6
39	Quantifying the hierarchy of structural and mechanical length scales in granular systems. Extreme Mechanics Letters, 2022, 51, 101590.	4.1	6
40	SIMULATION OF PARTICLE SIZE EFFECT ON DYNAMIC PROPERTIES AND FRACTURE OF PTFE-W-Al COMPOSITES. AIP Conference Proceedings, 2008, , .	0.4	5
41	Propagation of rarefaction pulses in particulate materials with strain-softening behavior. , 2012, , .		5
42	SOLITARY AND SHOCK WAVES IN STRONGLY NONLINEAR METAMATERIALS. , 2008, , .		4
43	Borehole breakout modeling in arkose and granite rocks. Geomechanics and Geophysics for Geo-Energy and Geo-Resources, 2021, 7, 1.	2.9	4
44	Pulse mitigation by a composite discrete medium. European Physical Journal Special Topics, 2006, 134, 473-479.	0.2	4
45	PARTICLE SIZE EFFECT IN GRANULAR COMPOSITE ALUMINUM-TUNGSTEN. , 2009, , .		3
46	An analytical expression for temperature in a thermodynamically consistent model with a Mie-Gruneisen equation for pressure. International Journal of Impact Engineering, 2020, 143, 103612.	5.0	3
47	Strongly Nonlinear Waves in Polymer Based Phononic Crystals. AIP Conference Proceedings, 2006, , .	0.4	2
48	Mesoscale Modeling of Porous Materials Using New Methodology for Fracture and Frictional Contact in the Material Point Method. Conference Proceedings of the Society for Experimental Mechanics, 2018, , 97-102.	0.5	2
49	Wave Propagation In Strongly Nonlinear Two-Mass Chains. , 2010, , .		1
50	Mesoscale studies of mixing in reactive materials during shock loading. , 2012, , .		1
51	Microscale investigation of dynamic impact of dry and saturated glass powder. AIP Conference Proceedings, 2018, , .	0.4	1
52	Beam elements with frictional contact in the material point method. International Journal for Numerical Methods in Engineering, 2022, 123, 1013-1035.	2.8	1
53	MODELING AND CHARACTERIZATION OF PMMA FOR HIGH STRAIN-RATE AND FINITE DEFORMATIONS. , 2009, , .		0
54	Stationary rarefaction waves in discrete materials with strain-softening behavior. International Journal of Modern Physics B, 2017, 31, 1742005.	2.0	0

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55	On mesoscale methods to enhance full-stress continuum modeling of porous compaction. AIP Conference Proceedings, 2017, , .	0.4	0
56	Simulations and experiments of dynamic granular compaction in non-ideal geometries. AIP Conference Proceedings, 2018, , .	0.4	0
57	Mesoscale study of rate effects in shear strength of powders during compaction. AIP Conference Proceedings, 2020, , .	0.4	0
58	Erratum to "An analytical expression for temperature in a thermodynamically consistent model with a Mie-Gruneisen equation for pressure" Int. J. Impact Eng. 143 (2020) 103612. International Journal of Impact Engineering, 2021, 154, 103885.	5.0	0
59	Fracture and Contact in the Material Point Method: New Approaches and Applications. Computational and Experimental Methods in Structures, 2018, , 289-326.	0.3	0
60	Finite element analyses of a granular assembly under projectile loading incorporating computed tomography imaging and damage mechanics. AIP Conference Proceedings, 2020, , .	0.4	0