# Luis Cueto-Felgueroso

## List of Publications by Citations

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| **75** papers | **2,193** citations | **26** h-index | **45** g-index |
| **79** ext. papers | **2,630** ext. citations | **4.3** avg, IF | **5.33** L-index |

| # | Paper | IF | Citations |
|---|-------|-----|-----------|
| 75 | High-order finite volume schemes on unstructured grids using moving least-squares reconstruction. Application to shallow water dynamics. *International Journal for Numerical Methods in Engineering*, **2006**, 65, 295-331 | 2.4 | 239 |
| 74 | A new shock-capturing technique based on Moving Least Squares for higher-order numerical schemes on unstructured grids. *Computer Methods in Applied Mechanics and Engineering*, **2010**, 199, 2544-2558 | 5.7 | 227 |
| 73 | Fluid mixing from viscous fingering. *Physical Review Letters*, **2011**, 106, 194502 | 7.4 | 138 |
| 72 | Nonlocal interface dynamics and pattern formation in gravity-driven unsaturated flow through porous media. *Physical Review Letters*, **2008**, 101, 244504 | 7.4 | 109 |
| 71 | Scaling of convective mixing in porous media. *Physical Review Letters*, **2012**, 109, 264503 | 7.4 | 99 |
| 70 | Comprehensive comparison of pore-scale models for multiphase flow in porous media. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 13799-13806 | 11.5 | 90 |
| 69 | A phase field model of unsaturated flow. *Water Resources Research*, **2009**, 45, | 5.4 | 63 |
| 68 | Forecasting long-term gas production from shale. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 19660-1 | 11.5 | 62 |
| 67 | Finite volume solvers and Moving Least-Squares approximations for the compressible Navier Stokes equations on unstructured grids. *Computer Methods in Applied Mechanics and Engineering*, **2007**, 196, 4712-4736 | 5.7 | 62 |
| 66 | A time-adaptive finite volume method for the Cahn Hilliard and Kuramoto Sivashinsky equations. *Journal of Computational Physics*, **2008**, 227, 9985-10017 | 4.1 | 55 |
| 65 | A metric of influential spreading during contagion dynamics through the air transportation network. *PLoS ONE*, **2012**, 7, e40961 | 3.7 | 51 |
| 64 | Quantifying mixing in viscously unstable porous media flows. *Physical Review E*, **2011**, 84, 066312 | 2.4 | 51 |
| 63 | Impact of viscous fingering and permeability heterogeneity on fluid mixing in porous media. *Water Resources Research*, **2015**, 51, 2634-2647 | 5.4 | 46 |
| 62 | Phase field model of fluid-driven fracture in elastic media: Immersed-fracture formulation and validation with analytical solutions. *Journal of Geophysical Research: Solid Earth*, **2017**, 122, 2565-2589 | 3.6 | 42 |
| 61 | Macroscopic phase-field model of partial wetting: bubbles in a capillary tube. *Physical Review Letters*, **2012**, 108, 144502 | 7.4 | 42 |
| 60 | Synergetic fluid mixing from viscous fingering and alternating injection. *Physical Review Letters*, **2013**, 111, 144501 | 7.4 | 41 |
| 59 | Three-dimensional simulation of unstable gravity-driven infiltration of water into a porous medium. *Journal of Computational Physics*, **2013**, 238, 217-239 | 4.1 | 41 |

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| 58 | A phase-field model of two-phase Hele-Shaw flow. *Journal of Fluid Mechanics*, **2014**, 758, 522-552 | 3.7 | 39 |
| 57 | Stability analysis of a phase-field model of gravity-driven unsaturated flow through porous media. *Physical Review E*, **2009**, 79, 036301 | 2.4 | 38 |
| 56 | Hand-Hygiene Mitigation Strategies Against Global Disease Spreading through the Air Transportation Network. *Risk Analysis*, **2020**, 40, 723-740 | 3.9 | 36 |
| 55 | Rock dissolution patterns and geochemical shutdown of $CO_2$-brine-carbonate reactions during convective mixing in porous media. *Journal of Fluid Mechanics*, **2015**, 764, 296-315 | 3.7 | 34 |
| 54 | Forced Wetting Transition and Bubble Pinch-Off in a Capillary Tube. *Physical Review Letters*, **2018**, 120, 084501 | 7.4 | 33 |
| 53 | Pattern formation and coarsening dynamics in three-dimensional convective mixing in porous media. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2013**, 371, 20120355 | 3 | 30 |
| 52 | Phase Field Model of Hydraulic Fracturing in Poroelastic Media: Fracture Propagation, Arrest, and Branching Under Fluid Injection and Extraction. *Journal of Geophysical Research: Solid Earth*, **2018**, 123, 2127-2155 | 3.6 | 28 |
| 51 | On the Galerkin formulation of the smoothed particle hydrodynamics method. *International Journal for Numerical Methods in Engineering*, **2004**, 60, 1475-1512 | 2.4 | 27 |
| 50 | Thin films in partial wetting: stability, dewetting and coarsening. *Journal of Fluid Mechanics*, **2018**, 845, 642-681 | 3.7 | 26 |
| 49 | Anomalous physical transport in complex networks. *Physical Review E*, **2010**, 82, 055101 | 2.4 | 24 |
| 48 | On the accuracy of finite volume and discontinuous Galerkin discretizations for compressible flow on unstructured grids. *International Journal for Numerical Methods in Engineering*, **2009**, 78, 1553-1584 | 2.4 | 23 |
| 47 | On the simulation of wave propagation with a higher-order finite volume scheme based on Reproducing Kernel Methods. *Computer Methods in Applied Mechanics and Engineering*, **2010**, 199, 1471-1490 | 5.7 | 23 |
| 46 | High-accurate SPH method with Multidimensional Optimal Order Detection limiting. *Computer Methods in Applied Mechanics and Engineering*, **2016**, 310, 134-155 | 5.7 | 23 |
| 45 | High-order Finite Volume Methods and Multiresolution Reproducing Kernels. *Archives of Computational Methods in Engineering*, **2008**, 15, 185-228 | 7.8 | 22 |
| 44 | Thin Films in Partial Wetting: Internal Selection of Contact-Line Dynamics. *Physical Review Letters*, **2015**, 115, 034502 | 7.4 | 21 |
| 43 | A discrete-domain description of multiphase flow in porous media: Rugged energy landscapes and the origin of hysteresis. *Geophysical Research Letters*, **2016**, 43, 1615-1622 | 4.9 | 21 |
| 42 | Phase-field model for brittle fracture. Validation with experimental results and extension to dam engineering problems. *Engineering Fracture Mechanics*, **2017**, 178, 109-125 | 4.2 | 19 |
| 41 | Nonequilibrium Thermodynamics of Hydrate Growth on a Gas-Liquid Interface. *Physical Review Letters*, **2018**, 120, 144501 | 7.4 | 19 |

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| 40 | Stick-slip dynamics of flow-induced seismicity on rate and state faults. *Geophysical Research Letters*, **2017**, 44, 4098-4106 | 4.9 | 15 |
| 39 | Use of Pressure Management to Reduce the Probability of Pipe Breaks: A Bayesian Approach. *Journal of Water Resources Planning and Management - ASCE*, **2015**, 141, 04015010 | 2.8 | 14 |
| 38 | Thermodynamic coarsening arrested by viscous fingering in partially miscible binary mixtures. *Physical Review E*, **2016**, 94, 033111 | 2.4 | 14 |
| 37 | The price of anarchy in mobility-driven contagion dynamics. *Journal of the Royal Society Interface*, **2013**, 10, 20130495 | 4.1 | 14 |
| 36 | Resolution of computational aeroacoustics problems on unstructured grids with a higher-order finite volume scheme. *Journal of Computational and Applied Mathematics*, **2010**, 234, 2089-2097 | 2.4 | 14 |
| 35 | Viscous fingering with partially miscible fluids. *Physical Review Fluids*, **2017**, 2, | 2.8 | 14 |
| 34 | Dynamic and Quasi-Dynamic Modeling of Injection-Induced Earthquakes in Poroelastic Media. *Journal of Geophysical Research: Solid Earth*, **2018**, 123, 5730-5759 | 3.6 | 14 |
| 33 | Pore-scale modeling of phase change in porous media. *Physical Review Fluids*, **2018**, 3, | 2.8 | 12 |
| 32 | Adaptive rational spectral methods for the linear stability analysis of nonlinear fourth-order problems. *Journal of Computational Physics*, **2009**, 228, 6536-6552 | 4.1 | 11 |
| 31 | Crustal fingering facilitates free-gas methane migration through the hydrate stability zone. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 31660-31664[11.5] | | 11 |
| 30 | High-Resolution Finite Volume Methods on Unstructured Grids for Turbulence and Aeroacoustics. *Archives of Computational Methods in Engineering*, **2011**, 18, 315-340 | 7.8 | 10 |
| 29 | Implicit Large Eddy Simulation of non-wall-bounded turbulent flows based on the multiscale properties of a high-order finite volume method. *Computer Methods in Applied Mechanics and Engineering*, **2010**, 199, 615-624 | 5.7 | 10 |
| 28 | Numerical Modeling of Injection-Induced Earthquakes Using Laboratory-Derived Friction Laws. *Water Resources Research*, **2018**, 54, 9833-9859 | 5.4 | 9 |
| 27 | Scaling of capillary trapping in unstable two-phase flow: Application to CO2 sequestration in deep saline aquifers. *Energy Procedia*, **2009**, 1, 3421-3428 | 2.3 | 8 |
| 26 | Impact of Confining Stress on Capillary Pressure Behavior During Drainage Through Rough Fractures. *Geophysical Research Letters*, **2019**, 46, 7424-7436 | 4.9 | 7 |
| 25 | Delayed Weakening and Reactivation of Rate-and-State Faults Driven by Pressure Changes Due to Fluid Injection. *Journal of Geophysical Research: Solid Earth*, **2019**, 124, 11917-11937 | 3.6 | 7 |
| 24 | Fluid-driven fracture propagation in heterogeneous media: Probability distributions of fracture trajectories. *Physical Review E*, **2017**, 96, 053002 | 2.4 | 7 |
| 23 | Xenon Hydrate as an Analog of Methane Hydrate in Geologic Systems Out of Thermodynamic Equilibrium. *Geochemistry, Geophysics, Geosystems*, **2019**, 20, 2462-2472 | 3.6 | 6 |

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| 22 | Self-organization of network dynamics into local quantized states. *Scientific Reports*, **2016**, 6, 21360 | 4.9 | 5 |
| 21 | Comparison between 2D Shallow-Water Simulations and Energy-Momentum Computations for Transcritical Flow Past Channel Contractions. *Water (Switzerland)*, **2019**, 11, 1476 | 3 | 5 |
| 20 | Regime shifts in bistable water-stressed ecosystems due to amplification of stochastic rainfall patterns. *Physical Review E*, **2015**, 91, 052148 | 2.4 | 5 |
| 19 | Diffusion limited mixing in confined media. *Physical Review Fluids*, **2020**, 5, | 2.8 | 5 |
| 18 | A continuum model of unstable infiltration in porous media endowed with an entropy function. *Advances in Water Resources*, **2020**, 144, 103684 | 4.7 | 5 |
| 17 | Numerical viscosity reduction in the resolution of the shallow water equations with turbulent term. *International Journal for Numerical Methods in Fluids*, **2008**, 58, 781-802 | 1.9 | 4 |
| 16 | Interplay between Fingering Instabilities and Initial Soil Moisture in Solute Transport through the Vadose Zone. *Water (Switzerland)*, **2020**, 12, 917 | 3 | 3 |
| 15 | Thermo-Poroelastic Analysis of Induced Seismicity at the Basel Enhanced Geothermal System. *Sustainability*, **2019**, 11, 6904 | 3.6 | 3 |
| 14 | Influence of Erodible Beds on Shallow Water Hydrodynamics during Flood Events. *Water (Switzerland)*, **2020**, 12, 3340 | 3 | 2 |
| 13 | Geomechanical Constraints on Hydro-Seismicity: Tidal Forcing and Reservoir Operation. *Water (Switzerland)*, **2020**, 12, 2724 | 3 | 2 |
| 12 | Reply to comment by David A. DiCarlo on A phase field model of unsaturated flow *Water Resources Research*, **2010**, 46, | 5.4 | 2 |
| 11 | A numerical model for the transport of salinity in estuaries. *International Journal for Numerical Methods in Fluids*, **2008**, 56, 507-523 | 1.9 | 2 |
| 10 | Two Fluid Flow in a Capillary Tube. *Springer Proceedings in Mathematics and Statistics*, **2015**, 149-161 | 0.2 | 2 |
| 9 | Hand-hygiene mitigation strategies against global disease spreading through the air transportation network | | 2 |
| 8 | Numerical Simulation of Unstable Preferential Flow during Water Infiltration into Heterogeneous Dry Soil. *Water (Switzerland)*, **2020**, 12, 909 | 3 | 2 |
| 7 | Implicit large-Eddy simulation with a moving least squares-based finite volume method. *IOP Conference Series: Materials Science and Engineering*, **2010**, 10, 012235 | 0.4 | 1 |
| 6 | Multirate Mass Transfer Approach for Double-Porosity Poroelasticity in Fractured Media. *Water Resources Research*, **2021**, 57, e2021WR029804 | 5.4 | 1 |
| 5 | Pattern formation and coarsening dynamics in three-dimensional convective mixing in porous media. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2013**, 371, 20120355 | 3 | 1 |

4    A mean gradient method to solve shallow flows **2012**, 401-404

3    A Higher-Order Finite Volume Method Using Multiresolution Reproducing Kernels. *Lecture Notes in Computational Science and Engineering*, **2008**, 157-171                    0.3

2    An MLSPH algorithm for free surface flows in engineering applications **2003**, 873-876

1    The Impact of the Geometry of the Effective Propped Volume on the Economic Performance of Shale Gas Well Production. *Energies*, **2021**, 14, 2475                    3.1