

Biographical Sketch

Richard A. Regueiro

Department of Civil, Environmental and Architectural Engineering, University of Colorado Boulder.
Boulder, CO 80309-0428, *Email:* richard.regueiro@colorado.edu

a. Professional Preparation

University of Pennsylvania, Philadelphia, PA	Civil Engineering Systems	B.S.E.	1991
Massachusetts Institute of Technology, Cambridge, MA	Aeronautics and Astronautics	S.M.	2005
Stanford University, Stanford, CA	Civil and Environmental Engineering	Ph.D.	2009

b. Professional Appointments

2012-Current: Associate Professor, Dept. of Civil, Environmental, and Architectural Eng., University of Colorado Boulder, Boulder, CO.

2014 (Autumn): Fulbright US Scholar; Academic Visitor, Engineering Science Department; University of Oxford, United Kingdom; Visiting Fellow, Brasenose College, Oxford, United Kingdom

2014 (Winter-Spring): UPS Foundation Visiting Associate Professor: Department of Civil and Environmental Engineering, Stanford University, Stanford, CA

2005-2012: Assistant Professor, Dept. of Civil, Environmental, and Architectural Eng., University of Colorado Boulder, Boulder, CO.

2004-2005: Principal Member of Technical Staff, Science-Based Materials Modeling Department, Sandia National Laboratories, Livermore, CA.

1998-2004: Senior Member of Technical Staff, Science-Based Materials Modeling Department, Sandia National Laboratories, Livermore, CA.

2002, 2003 (Winter): Lecturer, Structural Engineering & Geomechanics Division, Stanford University, Stanford, CA

1993-1998: Graduate Research and Teaching Assistant: Structural Engineering & Geomechanics Division, Stanford University, Stanford, CA

1992-1993: Draper Fellow: Charles Stark Draper Laboratory, Cambridge, MA

1991 (Autumn): Graduate Teaching Assistant, Materials and Structures Division, Aero/Astro, MIT

c. Products

Products or Publications Most Closely Related to Project

- [1] Yan, B., Regueiro, R.A. (2018) Comparison between pure MPI and hybrid MPI-OpenMP parallelism for 3D Discrete Element Method (DEM) of ellipsoidal and poly-ellipsoidal particles, *Computational Particle Mechanics* 5(4):553-577.
- [2] Yan, B., Regueiro, R.A. (2018) Large-scale dynamic and static simulations of complex-shaped granular materials using parallel three-dimensional Discrete Element Method (DEM) on DoD supercomputers, *Engineering Computations* 35(2):1049-1084.
- [3] Bennett, K., Regueiro, R.A., Borja, R.I. (2016) Finite strain elastoplasticity considering the Eshelby stress for materials undergoing plastic volume change, *Int. J. Plast.*, 77:214-245
- [4] Zhang, B., Regueiro, R.A. (2015) On large deformation granular strain measures for generating stress-strain relations based upon three-dimensional discrete element simulations, *Int. J. Solids Struct.*, 66:151-170.
- [5] Regueiro, R.A., Ebrahimi, D. (2010) Implicit dynamic three-dimensional finite element analysis of an inelastic biphasic mixture at finite strain. Part 1: application to a simple geomaterial. *Comput. Meth. Appl. Mech. Eng.* 199:2024-2049.

Other Significant Products or Publications

- [1] Zhang, B., Regueiro, R.A., Druckrey, A.M., Alshibli, K. (2018) Construction of poly-ellipsoidal grain shapes from SMT imaging on sand, and the development of a new DEM contact detection algorithm, *Eng. Comput.* 35(2):733-771.

- [2] Yan, B., Regueiro, R.A. (2018) Superlinear speedup phenomenon in parallel 3D Discrete Element Method (DEM) simulations of complex-shaped particles, *Parallel Computing* 75:61-87
- [3] Amirrahmat, S., Alshibli, K., Jarrar, M., Zhang, B., Regueiro, R.A. (2018) Equivalent continuum strain calculations based on 3D particle kinematic measurements of sand, *International Journal for Numerical and Analytical Methods in Geomechanics* 42(8):999-1015
- [4] Regueiro, R.A., Duan, Z., Wang, W., Sweetser, J.D., Jensen, E.W. (2016) General formulation of a poromechanical cohesive surface element with elastoplasticity for modeling interfaces in fluid-saturated geomaterials, *Int. J. Multi. Comp. Eng.* 14(4):323-347.

d. Synergistic Activities

- **Associate Editor/ Editorial Board Member:** *ASCE Journal of Engineering Mechanics* (01/12-present), *Acta Geotechnica* (10/12-present), *International Journal for Numerical and Analytical Methods in Geomechanics* (09/13-present).
- **Tahoe Development Server Administrator and Owner**, tahoe.sourceforge.net (password-protected cvsweb sourcecode browser and repository). Password-protected development cvs repository allowing easy code development access for international researchers.
- **Committee membership:** ASCE Engineering Mechanics Division Committee on Modeling Inelasticity and Multiscale Behavior (member 10/02-, chair 10/11-9/13), Poromechanics (member 8/10-), Computational Mechanics (member 8/12-); ASCE Geo-Institute (G-I) Committee on Soil Properties & Modelling: Member (12/09-).