

Stanford



Ronaldo Borja

Professor of Civil and Environmental Engineering

CONTACT INFORMATION

- **Administrator**

Kim Vonner - Administrative Associate

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Bio

BIO

Borja works in computational mechanics, geomechanics, and geosciences. His research includes developing strain localization and failure models for soils and rocks, modeling coupled solid deformation/fluid flow phenomena in porous materials, and finite element modeling of faulting, cracking, and fracturing in quasi-brittle materials.

ACADEMIC APPOINTMENTS

- Professor, Civil and Environmental Engineering

PROFESSIONAL EDUCATION

- PhD, Stanford University (1984)

LINKS

- <https://web.stanford.edu/~borja>: <https://web.stanford.edu/~borja>

Teaching

COURSES

2025-26

- Computational Poromechanics: CEE 314 (Spr)
- Mechanics and Finite Elements: CEE 281 (Win)

2024-25

- Mechanics and Finite Elements: CEE 281 (Win)
- Plasticity Modeling and Computation: CEE 315 (Spr)

2023-24

- Computational Poromechanics: CEE 314 (Spr)
- Geotechnical Engineering: CEE 101C (Aut)

- Mechanics and Finite Elements: CEE 281 (Win)

2022-23

- Mechanics and Finite Elements: CEE 281 (Win)
- Plasticity Modeling and Computation: CEE 315 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Advisor (AC)

Jun Geng, Hemiao Zhang

Master's Program Advisor

Jeffrey Dai, Yixin Feng, Matthew Ross, Simon Willcox, Shunyu Yao

Doctoral (Program)

Jun Geng, Damian Sun, Hemiao Zhang, Daniel Zhou

Publications

PUBLICATIONS

- **Conservation laws for coupled hydromechanical processes in unsaturated porous media: Theory and implementation.** *Mechanics of Unsaturated Geomaterials*
I., A., Borja, J.
ISTE Ltd. and John Wiley and Sons.2010: 186–208
- **Localized and diffuse bifurcations in porous rocks undergoing shear localization and cataclastic flow.** *Computational Plasticity (Computational Methods in Applied Sciences)*
I.
Springer.2007
- **Foreword** *Computer Methods in Applied Mechanics and Engineering*
Borja, R., I.
2004; 193 (27-29): iii.
- **Modelo de plasticidad multiaxial para arcillas sometidas a carga dinámica** *Revista Internacional de Métodos Numéricos para Cálculo y Diseño en Ingeniería*
Montáns, F., J., Borja, R., I.
1999; 15 (2): 169-192
- **Consolidación elastoplástica con deformaciones finitas: Implementación con elementos finitos y ejemplos numéricos** *Revista Internacional de Métodos Numéricos para Cálculo y Diseño en Ingeniería*
Borja, R., I., Tamagnini, C., Alarcón, E.
1999; 15 (2): 269-296
- **Finite strain elastoplastic consolidation, Part 2: Finite element implementation and numerical examples** *Computer Methods in Applied Mechanics and Engineering*
Borja, R., I., Tamagnini, C., Alarcón, E.
1998; 159: 103-122
- **Un marco matemático para la consolidación elastoplástica con deformaciones finitas** *Revista Internacional de Métodos Numéricos para Cálculo y Diseño en Ingeniería*
Borja, R., I., Alarcón, E.
1995; 3 (11): 345-381