

Clay Emerson Wood

clayewood@gmail.com +1 470-305-8655

EDUCATION

Pennsylvania State University
Ph.D. Geosciences

State College, PA
08/2017 – 05/2024

Emory University
B.S. Physics

Atlanta, GA
08/2012 – 05/2016

PROFESSIONAL APPOINTMENTS

University of Texas -- Carbon Mineralization & Reaction-driven Fracturing
Postdoctoral Fellow

Austin, TX
09/2023 - Present

Emory University -- Fluid and Granular Mechanics Physics Lab
Research Technician Research Assistant

Atlanta, GA
06/2016 - 07/2017

SELECTED PUBLICATIONS

C. Wood, N. Tisato, N. Espinoza, E. Ukar. HydroFIM: A Hydrostatic Pressure Fluid Injection and Mineralization Apparatus to Study Reactive Flow. *In Prep.*

A. Eijssink, **C. Wood**, C. Marone, P. Shokouhi, J. Rivière, D. Elsworth. Evolution of friction and stability, permeability and elastic wave characteristics with roughness during the maturation of faults. *Submitted.*

C. Wood, J. Rivière, D. Elsworth, C. Marone, P. Shokouhi. Poromechanics of particle remobilization and interface stiffness of dynamically stressed fractured rock. *In Prep.*

C. Wood, P. Manogharan, A. Rathbun, J. Rivière, D. Elsworth, C. Marone, P. Shokouhi. (2024) Relating fracture aperture to hydro-mechanical properties of dynamically-stressed tensile-fractured rock. *JGR: Solid Earth*

R. Affinito, **C. Wood**, S. Marty, D. Elsworth, C. Marone. (2024) The stability transition from stable to unstable frictional slip with finite pore pressure. *GRL* e2023GL105568.

C. Wood, P. Shokouhi, P. Manogharan, J. Rivière, D. Elsworth, C. Marone. (2021) Imaging Elastodynamic and Hydraulic Properties of In Situ Fractured Rock: An Experimental Investigation Exploring Effects of Dynamic Stressing and Shearing. *JGR: Solid Earth* e2020JB021521.

S. Shreedharan, M. Ikari, **C. Wood**, D. Saffer, L. Wallace, C. Marone. (2021) Frictional and Lithological Controls on Shallow Slow Slip at the Northern Hikurangi Margin. *G-Cubed*.

P. Manogharan, **C. Wood**, C. Marone, D. Elsworth, J. Rivière, P. Shokouhi. (2021) Nonlinear elastodynamic behavior of intact and fractured rock under in-situ stress and saturation conditions. *JMPS* 153, 104491.

P. Manogharan, **C. Wood**, C. Marone, D. Elsworth, J. Rivière, P. Shokouhi. (2021) Experimental Investigation of Elastodynamic Nonlinear Response of Dry Intact, Fractured and Saturated Rock. *Rock Mech Rock Eng.* 125.

A. Mouat, **C. Wood**, J. Pye, J. Burton. (2020) Tuning Contact Line Dynamics and Deposition Patterns in Volatile Liquid Mixtures. *Phys. Rev. Lett*, 124, 064502

P. Shokouhi, J. Jin, **C. Wood**, J. Rivière, B. Madara, D. Elsworth, C. Marone. (2020). Dynamic stressing of naturally fractured rocks: On the relation between transient changes in permeability and elastic wave velocity. *Geophys. Rev. Lett*, 47, e2019GL083557.

A. Mouat, **C. Wood**, J. Pye, J. Burton. (2019) Liquid deposition through evaporation. *Phys. Rev. Fluids*, 4, 100512.

J. Pye, **C. Wood**, J. Burton. (2018) Precursors to Molecular Slip on Smooth Hydrophobic Surfaces. *Phys. Rev. Lett*, 121, 134501.

SELECTED CONFERENCE TALKS & PRESENTATIONS

C. Wood, C. Ke, J. Riviere, D. Elsworth, C. Marone, P. Shokouhi. Decoupling the poromechanics of particle remobilization and interface stiffness of dynamically stressed tensile fractured rock. Poster. American Geophysical Union Fall Meeting. December 2022.

C. Wood, C. Ke, A. Rathbun, J. Riviere, D. Elsworth, C. Marone, P. Shokouhi. Probing the micromechanical features of a fracture interface using a multi-physics approach: A numerical investigation relating asperity deformation with fluid flow. Talk. European Geophysical Union. May 2022.

C. Wood, P. Manogharan, J. Rivière, D. Elsworth, C. Marone, P. Shokouhi. Relating fracture aperture to hydraulic and elastodynamic properties of dynamically-stressed rock under true-triaxial stress conditions. Talk. American Geophysical Union Fall Meeting. Washington D.C., USA. December 2021.

C. Wood, P. Manogharan, J. Rivière, D. Elsworth, C. Marone, P. Shokouhi. Relating fracture aperture to hydraulic and elastodynamic properties of dynamically-stressed rock under true-triaxial stress conditions. Poster. The Physics of Earthquake Faulting. Rome, IT. September 2021.

C. Wood, P. Manogharan, S. Zi, J. Rivière, D. Elsworth, C. Marone, P. Shokouhi. The Relation Between Fracture Aperture and Hydro-mechanical Properties: An Experimental and Analytical Approach. Poster. American Geophysical Union Fall Meeting. Washington D.C., USA. December 2020.

C. Wood, P. Manogharan, J. Jin, J. Rivière, D. Elsworth, C. Marone, P. Shokouhi. The Influence of Fracture Aperture on Permeability and Elastic Nonlinearity: An Integrated Analytical and Empirical Investigation. Talk. American Geophysical Union Fall Meeting. Washington D.C. December 2019.

C. Wood, B. Madera, P. Shokouhi, J. Jin, J. Rivière, D. Elsworth, C. Marone. The Effect of Roughness on the Elasticity and Permeability of Fractured Media. Poster. Schatzalp 3rd Induced Seismicity Workshop. Davos, SW. March 2019.

C. Wood, B. Madera, P. Shokouhi, J. Jin, J. Rivière, D. Elsworth, C. Marone. The Effect of Roughness on the Elasticity and Permeability of Fractured Media. Poster. American Geophysical Union Fall Meeting. Washington D.C. December 2018.

C. Wood, B. Madera, P. Shokouhi, J. Jin, J. Rivière, D. Elsworth, C. Marone. The Effect of Roughness on the Elasticity and Permeability of Fractured Media. Poster. International School of Physics, Enrico Fermi. Verena, It. December 2018.

C. Wood, J. Pye, J. Burton. Liquid “Coffee Rings” and the Spreading of Volatile Liquid Mixtures. Talk. American Physical Society March Meeting. New Orleans, USA. March 2017

C. Wood, J. Pye, J. Burton. Quantifying stick-slip contact line motion of evaporating sessile droplets. Talk. American Physical Society March Meeting. Baltimore, USA. March 2016

TEACHING EXPERIENCE

- Geosc 597 *Techniques in Geophysical Experimentation*. Co-instructor with Dr. Chris Marone for laboratory skills course.
- Geosc 452: *Hydrogeology*. Teaching Assistant. Instructors: Dr. Byron Parizek, Dr. John Hooker

PROFESSIONAL MEMBERSHIPS

- American Geophysical Union member: 2018-Present
- American Physical Society member: 2016-Present