Simone Puel

10601 Exploration Way, ROC 2.116L, Austin, TX, 78758
(737)-230-6811 spuel@utexas.edu linkedin.com/in/simonepuel github.com/SimonePuel

Education

University of Texas at Austin – Jackson School of Geosciences **Aug. 2018 – May 2023 (Expected)**
Ph.D., Geological Sciences; GPA 3.95 *Austin, TX*
Adivsors: Dr. Thorsten W. Becker & Dr. Luc Lavier

Michigan Technological University – University of Milano-Bicocca **Aug. 2015 – Apr. 2017**
M.S., Summa Cum Laude: Geological Sciences and Technologies, and Seismology; GPA 4.00 *Houghton, MI*
Advisors: Dr. Gregory P. Waite & Dr. Alessandro Tibaldi

University of Milano-Bicocca **Oct. 2011 – Oct. 2014**
B.S., Summa Cum Laude: Geological Sciences and Technologies; GPA 4.00 *Milan, Italy*
Advisor: Dr. Alessandro Cavallo

Work Experience

The University of Texas at Austin **Aug. 2018 – Present**
Graduate Research Assistant (UT Institute for Geophysics) – Computational Geophysicist *Austin, TX*

- Develop a physics-based numerical software to solve partial differential equations in earthquake research science to study seismic source and Earth's structure
- Perform linear/non-linear, deterministic and Bayesian inference inverse problems to improve our knowledge in earthquake deformation processes

Teaching Assistant (GEO 303: Introduction to Geology & GEO 302E: Earth, Wind, and Fire) *Austin, TX*

- Over 300 hours of teaching experience and instructed more than 180 students from various backgrounds

Studio di Geologia e Idrogeologia di Frassinella Luigi **Apr. 2017 – Dec. 2017**
Engineering Geologist Intern *Trento, Italy*

- Performed geophysical and geotechnical site investigations, geologic mapping, rock and water sampling, and environmental assessments for various construction projects
- Assisted in writing more than 50 geotechnical and hydro-geological reports providing site-specific recommendations

Michigan Technological University **Aug. 2015 – Aug. 2016**
Graduate Research Assistant – Volcano Seismologist *Houghton, MI*

- Processed seismic data and performed ambient noise analysis to infer shallow structure of Pacaya volcano, Guatemala
- Acquired and processed infrasound data to investigate different eruptive behaviors at Stromboli volcano, Italy

University of Milano-Bicocca **Feb. 2014 – Aug. 2014**
Undergraduate Research Student – Geologist *Milan, Italy*

- Analyzed porphyry ornamental stones using analytical techniques (QXRPD, SEM–EDS, EDXRF, Hg-porosimetry)

Awards, Fellowships, and Scholarships

Marshall Memorial Endowed Presidential Scholarship **Nov. 2021**
The University of Texas at Austin *Austin, TX*
Endowed Presidential Scholarship (EPS) for Fall 2021 to recognize the achievements of outstanding students in their respective field of study

Ogden Memorial Scholarship & JEF Graduate Independent Studies **Jan. 2021**
The University of Texas at Austin *Austin, TX*
Fellowship for independent studies for Spring 2021

Earth, Planetary, and Space Sciences Institute (EPSSI) Scholarship **Dec. 2016**
Michigan Technological University *Houghton, MI*
Scholarship for Stromboli volcano fieldwork and Broadband Acquisition and Imaging Operation (BAcIO) 2016 workshop

International Geological Masters in Volcanology and Geotechniques (INVOGE) **Aug. 2015**
University of Milan-Bicocca *Milan, Italy*
Scholarship for 1st selected candidate for joint Master's degree program between the University of Milano-Bicocca and the Michigan Technological University

"Cassa Rurale Pinetana Fornace e Seregnano" Bank Scholarship **Jan. 2013 – Dec. 2016**
Cassa Rurale Pinetana Fornace e Seregnano *Trento, Italy*
Scholarship for merit distinction in high school and university studies

"FONDO GIOVANI - Borse di Studio 5b" scholarship **Sep. 2011 – Aug. 2016**
Opera Universitaria di Trento *Trento, Italy*
Scholarship for talented young students distinguished in High school and University studies

Journal Publications

- **Puel, S.**, Villa, U., Becker, T. W., Ghattas, O., Liu, D. (20xx). A Mixed, Unified Forward/Inverse Framework for Earthquake Problems: Material Property Estimate and Bayesian Inference. *In preparation.*
- Dorsett, J., H. Johnson, K. M., Becker, T. W., **Puel, S.** (20xx). Early Ridgecrest Postseismic Deformation Reveals Viscoelastic Flow in Weak Uppermost Mantle in Southern California. *In preparation.*
- **Puel, S.**, Khattatov, E., Villa, U., Liu, D., U., Ghattas, O., Becker, T. W. (2022). A mixed, unified forward/inverse framework for earthquake problems: Fault implementation and coseismic slip estimate. *Geophysical Journal International, in press*; https://doi.org/10.1093/gji/ggac050.
- Ichimura, T., Fujita, K., Yamaguchi, T., Naruse, A., Wells J. C., Zimmer C. J., Tjerk, P. S., Hori, T., **Puel, S.**, Becker, T. W., Hori, M., Ueda, N. (2019). 416-PFLOPS Fast Scalable Implicit Solver on Low-Ordered Unstructured Finite Elements Accelerated by 1.10-ExaFLOPS Kernel with Reformulated AI-Like Algorithm: For Equation-Based Earthquake Modeling. *In Research Poster for SC19: International Conference for High Performance Computing, Networking, Storage and Analysis*, doi:10.5281/zenodo.3984156, Denver CO, 2019.

Conference Publications

- **Puel, S.**, Becker, T. W., Villa, U., Ghattas, O., Liu, D., Khattatov, E. (2021, 12) Forward-Inverse Modeling of Earthquake Cycle Deformation. Poster Presentation at *AGU 2021 Fall Meeting* (poster #G25C-0382).
- **Puel, S.**, Becker, T. W., Villa, U., Ghattas, O., Liu, D., Khattatov, E. (2021, 08) Forward-Inverse Modeling of Earthquake Cycle Deformation. Poster Presentation at *2021 SCEC Annual Meeting* (poster #025).
- Johnson, K. M., Dorsett, J. H., **Puel, S.**, Becker, T. W. (2020, 09) Using Postseismic Relaxation Test Southern California Viscosity Models. Poster Presentation at *2020 SCEC Annual Meeting* (poster #114).
- Dorsett, J. H., Johnson, K. M., **Puel, S.**, Becker, T. W. (2019). Postseismic Deformation and Stress Evolution Following the 2019 M 7.1 and M 6.4 Ridgecrest Earthquakes. *AGU 2019 Fall Meeting* (poster #S31G-0500).
- Dorsett, J. H., Johnson, K. M., **Puel, S.**, Becker, T. W. (2019, 08) Postseismic Deformation and Stress Evolution Following the 2019 M 7.1 and M 6.4 Ridgecrest Earthquakes. Poster Presentation at *2019 SCEC Annual Meeting* (poster #236).
- **Puel, S.**, Lanza, F., Medici, E. F., Waite, G. P. (2016). Spectral Variations in Volcanic Jet Noise: the Example of Stromboli Volcano, Italy. *AGU 2016 Fall Meeting* (poster #S11C-2459).

Leadership & Outreach

UTIG Marine Geophysics Journal Club **Jun. 2020 – Present**
Coordinator
- Organized weekly reading group to discuss recent scientific papers on marine geophysics, earthquake, and tectonics

International Society of Catastrophe Managers (ISCM) **Nov. 2021 – Present**
Student member

American Geophysical Union (AGU) **Oct. 2016 – Present**
Student member

Computational Skills

Languages: Python (Advanced), MATLAB (Advanced), BASH (Intermediate), Julia (Familiar), Fortran (Familiar)
Modeling & Inversions: Finite-Element (FENICS, Firedrake, PYLITH) and Finite-Difference (Python, MATLAB) Methods. Deterministic Inversions and Bayesian Inference Problems (HIPPYLIB). Adjoint-based Optimization Methods
Software & Frameworks: Linux/Unix, GIS, LaTeX, MS Office
Data Visualization: Python (Pandas, Matplotlib, Seaborn, Cartopy), MS Excel, Paraview, Generic Mapping Tools

Languages

Italian: Native or bilingual proficiency
English: Professional working proficiency. TOEFL iBT: 92 (06/2017)
German: Elementary proficiency. A2, GOETHE INSTITUT (07/2006)