ASHLEY BELLAS-MANLEY

ADDRESS	Aerospace Engineering Sciences University of Colorado Boulder 3775 Discovery Drive Boulder, CO, 80309
EMAIL & TELEPHONE	ashley.bellas@colorado.edu; 720-900-9363

EMPLOYMENT	08/2022-present	Postdoctoral Associate Department of Aerospace Engineering Sciences, University of Colorado Boulder
	08/2021-08/2022	Postdoctoral Fellow Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology
	05/2021-08/2021	Postdoctoral Associate Department of Physics, University of Colorado Boulder

EDUCATION	08/2014-05/2021	University of Colorado Boulder, Department of Physics Ph.D. in Geophysics: *Reconciling the Rheology of Earth's Lithosphere Across Vastly Different Length- and Time-Scales* Thesis advisor: Prof. Shijie Zhong
	09/2009-05/2014	University of British Columbia B.Sc. in Geophysics with distinction

PUBLICATIONS

Bellas, A. & L. Royden (2024), Basal Mantle Flow Over LLSVPs Explains Differences in Pacific and Indo-Atlantic Hotspot Motions, *J. Geophys. Res.: Solid Earth,* (in press).

Bellas, A., S.J. Zhong, & A.B. Watts (2022), Reconciling lithospheric rheology between laboratory experiments, field observations, and different tectonic settings, *Geophysical Journal International*, **228**, 857–875.

Bellas, A., & S.J. Zhong (2021), Effects of a weak lower crust on the flexure of continental lithosphere, *J. Geophys. Res.: Solid Earth,* **126**, 10, e2021JB022678.

Bellas, A., & S.J. Zhong (2021), Seismic strain rate and flexure at the Hawaiian Islands constrain the frictional coefficient, *Geochemistry, Geophysics, Geosystems*, **22**, e2020GC009547.

Bellas, A., S.J. Zhong, & A.B. Watts (2020). Constraints on the rheology of the lithosphere from flexure of the Pacific Plate at the Hawaiian Islands. *Geochemistry, Geophysics, Geosystems*, *21*, e2019GC008819. https://doi.org/10.1029/2019GC008819.

Bellas, A., S.J. Zhong, D. Bercovici, & E. Mulyukova (2018), Dynamic weakening with grain-damage and implications for slab detachment, *Phys. Earth Planet. Int*., 285, 76-90.

SKILLS

- Computational fluid dynamics
- MATLAB, Python, Fortran, C
- Writing grant proposals
- Data science
- Geodynamics
- Speaking
- Remote sensing
- Satellite geodesy
- Writing scientific papers

CONFERENCE PRESENTATIONS

AGU Fall Meeting (2023), San Francisco, CA. *Data-Driven Approaches to Understanding Future Regional Sea Level Change*, G53B-03.

NASA GRACE-FO Science Team Meeting (2023), Pasadena, CA. *Impacts of GIA Modeling Uncertainties on the Closure of the Global Mean Ocean Mass Budget*

NASA Sea Level Change Science Team Meeting (2023), Pasadena, CA. *Data-Driven Approaches to Understanding Regional Variations in Future Sea Level Change*

Study of the Earth's Deep Interior Conference (2022), Zurich, Switzerland. *Basal Mantle Flow Over LLSVPs Explains Differences in Pacific and Indo-Atlantic Hotspot Motions*

AGU Fall Meeting (2021), New Orleans, LA. *Effects of a Weak Lower Crust on the Flexure of Continental Lithosphere*, T11D-05.

AGU Fall Meeting (2021), New Orleans, LA. *Reconciling Lithospheric Rheology Between Laboratory Experiments, Field Observations, and Different Tectonic Settings*, MR43A-06.

AGU Fall Meeting (2020). *Testing the Yield-Stress Envelope Method Against Finite Element Models of Flexure*, T011-0008.

AGU Fall Meeting (2019) San Francisco, CA. *Constraining the Frictional Coefficient: a Comparison of Strain Rate Inferred from Seismicity and 3D Viscoelastic Loading Models at Hawaii*, MR44A-03.

AGU Fall Meeting (2019) San Francisco, CA. *Elastic Thickness: A Comparison of Estimates from Fully Dynamic Viscoelastic Models and the Yield-Strength Envelope Method*, MR51B-0040.

Gordon Research Conference (2019) Holyoke, MA. *Constraining the rheology of the lithosphere using flexure at the Hawaiian Islands.*

AGU Fall Meeting (2018) Washington, D.C. *Constraining mantle rheology at lithospheric conditions using observations of flexure at the Hawaiian Islands*, MR24A-01.

Study of the Earth's Deep Interior Conference (2018), Edmonton, AB, Canada. *Dynamics of a Subducted Slab with Grain-Damage*

EXPERIENCE

Ten years modifying, compiling, running parallelized open source codes in C, Fortran

Ten+ years processing, analyzing, interpreting, visualizing data (observational and model-generated)

ABOUT ME

Welcome, and thank you for visiting my CV!

I am a highly conscientious individual which means that I am orderly and industrious. I care about understanding things thoroughly, I am inspired by beauty, and I aim to serve a purpose. In my PhD, I investigated why Earth is the only terrestrial planet in the solar system with plate tectonics (Bellas et al., 2018-2022). As a postdoc, I studied the structure and dynamics of the deep Earth (Bellas & Royden, 2024), and combined satellite observations with computational models to quantify, understand, and project sea level change (Bellas & Nerem, 2023). I am looking for new opportunities to meet excellent people and pursue meaningful work. Please contact me if you are interested in working with me.