# ASHLEY BELLAS


ADDRESS

Earth, Atmospheric and Planetary Sciences
Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, MA, 02139

EMAIL & TELEPHONE

abellas@mit.edu; 720-900-9363


POSITIONS

2021-present — Postdoctoral Fellow
Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology

2021 — Postdoctoral Associate
Department of Physics, University of Colorado Boulder

EDUCATION

2014-2021 — University of Colorado Boulder, Department of Physics
Ph.D. in Geophysics
Thesis: *Reconciling the Rheology of Earth's Lithosphere Across Vastly Different Length- and Time-Scales*
Thesis advisor: Shijie Zhong

2009-2014 — University of British Columbia
B.Sc. in Geophysics (with distinction)

PUBLICATIONS

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.

CONFERENCE PRESENTATIONS

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

AGU Fall Meeting (2015) San Francisco, CA. Evolution of a Subducted Slab with Viscosity Controlled by Damage and Healing Processes, DI13B-2662.

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EXPERIENCE

Seven years of experience modifying and compiling the parallelized mantle convection codes Citcom and CitcomSVE (written in C)

Seven years of experience processing, analyzing, interpreting and visualizing computer generated data using GMT and Matlab

Ten years of experience processing, analyzing, interpreting and visualizing field data including topography, bathymetry, flexure, gravity, seismic event properties and arrays, and 3D stress fields

Experience in formulating the basic physics and mathematical solutions of fluid flow driven by density anomalies, rotation, and surface loads in systems with vertical viscosity contrasts and short- to long-wavelength features

Assisted in writing grant proposals

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SERVICE

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| 2020, 2021 | Reviewer for Journal of Geophysical Research - Solid Earth |
| 2014-2018 | Facilitator of the Women in Physics group at CU Boulder |

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MEMBERSHIP

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| 2014-present | American Geophysical Union |

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| AWARDS | 2013, 2014 | NSERC Undergraduate Student Research Award |
| TEACHING | 2014-2019 | Teaching assistant for undergraduate course in basic physics principles |
| FIELD WORK | 2013 | Kluane National Park, Yukon Territory, Canada |
| IMMIGRATION STATUS | | I am a Canadian citizen on F-1 status in the United States, and have been granted the STEM Optional Practical Training extension for an Employment Authorization Document (EAD) that is valid until 05/05/2024. I do not require an employer to sponsor a visa at this time. |