

BENJAMIN IDINI

Santa Cruz, CA 95060
bidini@ucsc.edu

Planetary Geophysicist

[Website: bidini.github.io](https://github.com/bidini)
[LinkedIn: benja-rodo](#)

Planetary Interiors and Evolution · Ocean Worlds · Tidal Interactions · Extraterrestrial Seismology · Gravity Radio Science · Solar System Exploration · Earthquake Mechanics · Earthquake Ground Motion · Tectonic Deformation

EDUCATION

Ph.D. in Planetary Science , <i>California Institute of Technology</i>	2022
M.S. in Geophysics , <i>California Institute of Technology</i>	2019
M.S. in Earthquake Engineering , <i>Universidad de Chile</i>	2016
B.S. in Civil Engineering , <i>Universidad de Chile</i>	2013

ACADEMIC APPOINTMENTS

UC President's Postdoctoral Fellow , <i>University of California, Santa Cruz, CA</i>	Sep 2022 — Present
Graduate Research/Teaching Assistant , <i>California Institute of Technology, Pasadena, CA</i>	Jun 2017 — Aug 2022
Research Geophysicist , <i>Universidad de Chile, Santiago, Chile</i>	Mar 2016 — Jun 2017

REFEREED PUBLICATIONS

-
12. Flores-Cuba, J., et al., including **Idini, B.** (in prep.). Mechanism and seismological signatures of rupture complexity induced by fault damage zones.
 11. **Idini, B.**, Ruiz, S., et al. (in prep.). Double distance dependence in high-frequency ground motion along the plate boundary in Northern Chile.
 10. Howard, S., et al., including **Idini, B.** (2023). Jupiter's interior from Juno: Equation-of-state uncertainties and dilute core extent. *Astronomy and Astrophysics*, 672. [[10.1051/0004-6361/202245625](https://doi.org/10.1051/0004-6361/202245625)]
 9. **Idini, B.** & Stevenson D.J. (2022). The gravitational imprint of an interior-orbital resonance in Jupiter-Io. *The Planetary Science Journal*, 3(4), 89. [[10.3847/PSJ/ac6179](https://doi.org/10.3847/PSJ/ac6179)]
 8. **Idini, B.** & Stevenson D.J. (2022). The lost meaning of Jupiter's high-degree Love numbers. *The Planetary Science Journal*, 3(1), 11. [[10.3847/PSJ/ac4248](https://doi.org/10.3847/PSJ/ac4248)]
 7. **Idini, B.** & Stevenson D.J. (2021). Dynamical tides in Jupiter as revealed by Juno. *The Planetary Science Journal*, 2(2), 69. [[10.3847/PSJ/abe715](https://doi.org/10.3847/PSJ/abe715)]
 6. **Idini, B.** & Ampuero J.-P. (2020). Fault-zone damage promotes pulse-like rupture and back-propagating fronts via quasi-static effects. *Geophysical Research Letters*, 47(23), e2020GL090736. [[10.1029/2020GL090736](https://doi.org/10.1029/2020GL090736)]
 5. Erickson, B., et al., including **Idini, B.** (2020). The community code verification exercise for simulating sequences of earthquakes and aseismic slip (SEAS). *Seismological Research Letters*, 91(2A), 874-890. [[10.1785/0220190248](https://doi.org/10.1785/0220190248)]
 4. Ross, Z., **Idini, B.**, et al. (2019). Hierarchical interlocked orthogonal faulting in the 2019 Ridgecrest earthquake sequence. *Science*, 366, 6463. [[10.1126/science.aaz0109](https://doi.org/10.1126/science.aaz0109)]
 3. Gurnis, M., et al., including **Idini, B.** (2019). Incipient subduction at the contact with stretched continental crust: The Puysegur Trench. *Earth and Planetary Science Letters*, 520, 212-219. [[10.1016/j.epsl.2019.05.044](https://doi.org/10.1016/j.epsl.2019.05.044)]
 2. Leyton, F., et al., including **Idini, B.** (2018). Empirical site classification of CSN network using strong-motion records. *Seismological Research Letters*, 89(2A), 512-518. [[10.1785/0220170167](https://doi.org/10.1785/0220170167)]
 1. **Idini, B.**, Rojas, F., et al. (2017). Ground motion prediction equations for the Chilean subduction zone, *Bulletin of Earthquake Engineering*, 15, 5. [[10.1007/s10518-016-0050-1](https://doi.org/10.1007/s10518-016-0050-1)]

SOFTWARE PUBLICATIONS

-
1. Luo, Y., Ampuero, J.P., et al., including **Idini, B.** (2017). QDYN: a Quasi-DYNamic earthquake simulator (v1.1). Zenodo.(doi: [10.5281/zenodo.322459](https://doi.org/10.5281/zenodo.322459)).

CONFERENCE PRESENTATIONS (O: ORAL, P:POSTER)

10. A tale of two planets: dilute cores in Jupiter and Saturn from in-situ spacecraft observations, UC Santa Cruz Postdocs Association Symposium, Santa Cruz CA, 2023 (O).
9. A tale of two planets: dilute cores in Jupiter and Saturn from in-situ spacecraft observations, UC PPFP Annual Meeting, Lake Arrowhead CA, 2023 (O).
8. The gravitational imprint of dynamical tides in Jupiter (invited), AGU Fall Meeting, Chicago IL, 2022 (O).
7. Tidal constraints on the radial extension and static stability of Jupiter's dilute core, AGU Fall Meeting, New Orleans LA, 2021 (P).
6. Dynamical tides in the Jovian System as revealed by Juno, AGU Fall Meeting, remote, 2020 (P).
5. The first three days of the 2019 Ridgecrest earthquake sequence, SCEC Annual meeting, Palm Springs CA, 2019 (P).
4. A Bayesian Image of the 2017 Kermanshah Seismic Sequence in the Northwestern Zagros, AGU Fall Meeting, Washington DC, 2018 (O).
3. Rupture Complexity Promoted by Damaged Fault Zones in Earthquake Cycle Models. In AGU Fall Meeting, New Orleans LA, 2017 (P).
2. Empirical dynamic amplification factors for sites based on seismic noise, 16th World Conference on Earthquake Engineering, Santiago, Chile, 2017 (O).
1. Ground motion prediction equations for the Chilean subduction zone, 2nd Geophysical Signatures of Earthquakes and Volcanoes - 2GSEV, Santiago, Chile, 2016 (P).

INVITED SEMINARS AND COLLOQUIA

MIT, Earth, Atmospheric, and Planetary Science Department Lecture Series	May 17, 2023
UC Santa Cruz, Baskin School of Engineering, Geophysical and Astrophysical Fluid Dynamics Seminar	May 12, 2023
UC Davis, Earth and Planetary Science Department Seminar	Apr 19, 2023
UC Santa Cruz, Earth and Planetary Science Department Whole Earth Seminar	Apr 18, 2023
UC San Diego & San Diego State University, Astrophysics Seminar	Mar 1, 2023
UC San Diego, Scripps Institution of Oceanography, IGPP Seminar	Feb 28, 2023
UC Berkeley, Center for Integrative Planetary Science Seminar	Feb 1, 2023
Rice University, Earth, Environmental, and Planetary Science Department Colloquium	Jan 19, 2023
UCLA, Earth, Planetary, and Space Sciences Department Colloquium	Oct 11, 2022
UC Santa Cruz, Other Worlds Laboratory, Astronomy and Astrophysics Planetary Lunch Seminar	Nov 7, 2022
Universidad de Chile, Department of Geophysics Seminar (virtual)	Jun 17, 2022
Caltech, DIX Planetary Science Seminar	Apr 27, 2021
Caltech, DIX Planetary Science Seminar	Jun 2, 2020

MENTORSHIP, LEADERSHIP, AND OUTREACH

Mentor in the Eugene Cota-Robles Fellowship program, UC Santa Cruz	2022 — Present
Primary convener and session organizer at AGU Fall Meeting, session: Giant Planet Interiors	2023
Invited speaker at NASA's Hyperwall Exhibition, AGU Fall Meeting, Chicago IL	2022
Invited speaker at Science Journeys, Caltech (youtube.com/user/caltech)	2021 — 2022
Mentor in the EPS/ESCI Undergraduate program, UC Santa Cruz	2022
Primary convener and session organizer at AGU Fall Meeting, session P013: Giant Planet Interiors	2022
Invited speaker in Urban Math Collaborative program, Long Beach Unified School District	2021
Host in Caltech's <i>Astronomía en el Bar</i> (Astronomy on tap hosted in Spanish; youtube.com/c/CaltechAstro)	2021
Mentor in Caltech's International Student Buddy Program	2020 — 2021
Judge in Caltech's Summer Undergraduate Research Fellow (SURF) poster competition	2020 — 2021
Panelist at Science for March Seismological Laboratory booth, Caltech	2018

Director in Student Federation Board, Universidad de Chile	2014
Director in Engineering Student Council Board, Universidad de Chile	2013

GRANTS, HONORS, AND AWARDS

Travel award, USRA-LPI Uranus Flagship Workshop (\$2.5k USD)	2023
Travel award, NASA Outer Planets Assessment Group (\$1k USD)	2022
University of California President's Postdoctoral Fellowship (~\$600k USD)	2022
AGU Outstanding Student Presentation Award (\$500 USD)	2021
Division of Geological and Planetary Sciences Fellowship, California Institute of Technology (~\$70k USD)	2017
Highest Distinction Major Graduate, Universidad de Chile	2016
CONICYT Master of Science Fellowship, Ministry of Education, Chile (~\$17k USD)	2014
Bicentenario Scholarship, Ministry of Education, Chile (~\$10k USD)	2012
Honored Undergraduate Student, Universidad de Chile	2011, 2012

TEACHING ASSISTANT EXPERIENCE

California Institute of Technology

Planetary Physics	2022
Planetary Structure and Evolution	2021
Geodynamics	2020
Freshman Seminar: Earthquakes	2019

Universidad de Chile

Advanced Structural Dynamics	2015
Seismic Design of Structures	2015

PLANETARY EXPLORATION

NASA's Europa Clipper Mission, Science Team Affiliate	Apr 2023 — Present
NASA's Juno Mission, Interiors Working Group	Jan 2020 — Present

- Provided interpretation to gravity data collected by the mission.

KISS workshop (invite only): Determining the Interior Structure of Uranus, Pasadena, CA Sep 11-15, 2023

- Jointly produced an integrated plan outlining a series of calculations together with observations that, if implemented, will be able to discriminate among competing models for Uranus's interior structure.

NASA-JPL Planetary Science Summer School, Remote May 2022 — Aug 2022

- Jointly formulated the strategic science goals, operation, and payload of a NASA New Frontiers mission concept to extract a surface sample from comet 67P/Churyumov-Gerasimenko and return it to Earth for laboratory analysis.

Science Crew on the M. G. L. Research Vessel, Puysegur Trench, New Zealand Mar 2018

- Assisted the deployment of instrumentation and acquisition of seismic, magnetic, and radar data while navigating the Pacific Ocean.

PROFESSIONAL ORGANIZATIONS

Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)	2021 — Present
Affiliate to the Keck Institute for Space Studies (KISS)	2019 — Present
American Geophysical Union (AGU)	2017 — Present

APPEARENCES IN NEWS ARTICLES

- [The tides of Jupiter can help scientists understand the history of the Solar System](#), Passant Rabie, Inverse Magazine May 5, 2021
- [Raising Tides on Jupiter with Its Moons](#), Susanna Kohler, AAS Nova Apr 21, 2021
- [Lessons from Ridgecrest](#), Robert Perkins, AAAS EurekAlert! Oct 17, 2019
- [Unprecedented movement detected on California earthquake fault capable of 8.0 temblor](#), Rong-Gong Lin II, LA Times Oct 17, 2019
- [Se detecta movimiento sin precedentes en una falla sísmica en California capaz de producir un temblor de 8.0](#), Rong-Gong Lin II, The San Diego Union-Tribune En Español Oct 17, 2019