

Magali I. Billen

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(a) Professional Preparation

University of Puget Sound	Tacoma, WA	Physics (Honors)	B.S., 1995
California Institute of Technology	Pasadena, CA	Geophysics	M.S., 1998
California Institute of Technology	Pasadena, CA	Geophysics	Ph.D., 2002
University of Leeds	Leeds, UK	Geodynamics	2001–2002
Woods Hole Oceanographic Institution	Woods Hole, MA	Geodynamics	2002–2003

(b) Appointments

University of California, Davis	Davis, CA	Professor	2013–present
Ludwig Maximilian University	Munich, Germany	Visiting Scholar	2017–2018
University of California, Davis	Davis, CA	Assoc. Professor	2008–2013
Northwestern University	Chicago, IL	Visiting Scholar	2009
University of California, Davis	Davis, CA	Asst. Professor	2003–2008

(c) Products

• Publications Most Clearly Related to Proposed Research

- Boneh, Y., E. Schottenfels, K. Kwong, I. van Zelst, X. Tong, M. Eimer, M. S. Miller, L. Moresi, J. M. Warren, D. A. Wiens, **M. I. Billen**, J. Naliboff, and Z. Zhan, *Intermediate-depth earthquakes controlled by incoming plate hydration along bending-related faults*, Geophysical Research Letters, **46**, 1–10, 10.1029/2018GL081585, 2019.
- Billen**, M. I. and K. M. Arredondo, *Decoupling of Plate-Asthenosphere Motion Caused by Non-linear Viscosity During Slab Folding in the Transition Zone*, Physics of the Earth and Planetary Interiors, **281**, 17–30, 10.1016/j.pepi.2018.04.011, 2018.
- Billen, M. I., *Insights into the Causes of Arc Rifting from 2D Dynamic Models of Subduction*, Geophysical Research Letters, **44**, 1–10, 10.1002/2017GL075061, 2017.
- Arredondo, K. M. and M. I. Billen, *Coupled Effects of Phase Transitions and Rheology in 2D Dynamic Models of Subduction*, Journal of Geophysical Research, **122**, 5813–5830, 10.1002/2017JB014374, 2017.
- He, Y., E. G. Puckett, and M. I. Billen, *A Discontinuous Galerkin Method with a Bound Preserving Limiter for Stable Advection of non-Diffusive Fields in Solid Earth Geodynamics*, Physics of the Earth and Planetary Sciences, **263**, 23–37, 10.1016/j.pepi.2016.12.001, 2017.

- Other Related Publications

- Rodríguez-González, M. I. Billen, A. M. Negredo, L. G. J. Montesi, *Along-strike variation in subducting plate velocity induced by along-strike variation in overriding plate structure: Insights from 3D numerical models*, Journal of Geodynamics, textbf100, 175–183, 10.1016/j.jog.2016.02.006, 2016.
- Arrial, P. and M. I. Billen, *Affects of Lithospheric Age on Oceanic Plateau Subduction*, Earth and Planetary Science Letters, **363**, 34–43, 2013.
- Jadamec, M. and M. I. Billen, *Reconciling Rapid 3-D Mantle Flow and Surface Plate Motions Near the Eastern Alaska Slab Edge*, Nature, **465**, 338–341, 2010.
- Burkett, E. and M. I. Billen, *Three-Dimensionality of Slab Detachment Due to Ridge-Trench Collision: Laterally Simultaneous Boudinage Versus Tear Propagation*, Geochemistry, Geophysics, Geosystems, **11**, Q11012, 2010.
- Billen, M. I. *Modeling the Dynamics of Subducting Slabs*, Annual Reviews of Earth and Planetary Science (invited submission), **36**, 325–356, 2008.

(d) Synergistic Activities

CIG, Computational Inf. for Geodynamics	Interim Director	May 2019 –
UC Davis HPC Task Force	Member	2019–
RCN:Planning a Modeling Collaboratory for Subduction Zone Science	Steering Comm.	2018–2021
CIG: Computational Inf. for Geodynamics	Exec. Comm.	2016–2018
CIG: Computational Inf. for Geodynamics	Science Steering Comm.	2009–2015
CIDER: Coop. Inst for Deep Earth Dyn.	Instructor and Senior Participant	2016
MPS Community Cluster Advisory Comm.	Chair	2015–2016
3D Geo-Structures Visualization Tools	http://3dgeostructuresvis.ucdavis.edu	2015–pres.
Launch Comms. for New Faculty (12)	U. C. Davis ADVANCE	2015–2016
Geology Graduate Program (Chair)	U. C. Davis, E&PS Department.	2012–2016