

Publication List (December 2015 to present)

Tectonics

- Naliboff, J., S. Brune, S.J.H. Buiter, Application of the open-source mantle convection code ASPECT to long-term tectonic simulations. American Geophysical Union Fall Meeting, December, 2016.
- Rajaonarison, T., D.S. Stamps, and S. Fishwick, The Malagasy Lithosphere-Asthenosphere System Constrained by Independent Initial Temperature Conditions: Implications for Extensional Processes, American Geophysical Union Fall Meeting, December, 2016.
- Stamps, D.S., W. Bangerth, and B.H. Hager, Regional 3D Numerical Modeling of the Lithosphere-Mantle System: Implications for Continental Rift-Parallel Surface Velocities, American Geophysical Union Fall Meeting, December, 2014.
- Stamps, D.S., W. Bangerth, and B.H. Hager, Influence of Edge-Driven 3D Convection on Mantle-Lithosphere Interactions in East Africa, 14th International Workshop on Modeling of Mantle and Lithospheric Dynamics, September, 2015.
- Stamps, D.S., Dynamics of Lithosphere-Asthenosphere Interactions Along the East African Rift for Princeton University, 2016.

Mantle Convection

- Citron, R.I., M. Manga, and E. Tan, The Martian Crustal Dichotomy: A Hybrid Origin, The 48th Lunar and Planetary Science Conference, 2017.
- He, Y., E.G. Puckett and M. Billen, A discontinuous Galerkin method with a bound preserving limiter for stable advection of non-diffusive fields in computational geodynamics, *Physics of the Earth and Planetary Interiors*, in press, DOI 10.1016/j.pepi.2016.12.001, 2016.
- He, Y., E. Puckett and M. Billen, Local Discontinuous Galerkin (LDG) Method for Advection of Active Compositional Fields with Discontinuous Boundaries: Demonstration and Comparison with Other Methods in the Mantle Convection Code ASPECT, American Geophysical Union Fall Meeting, Dec., 2015.
- He, Y., E. Puckett and M. Billen, and L. Kellogg, Discontinuous Galerkin (DG) Method for solving time dependent convection-diffusion type temperature equation : Demonstration and Comparison with Other Methods in the Mantle Convection Code ASPECT, American Geophysical Union Fall Meeting, Dec., 2016.
- Puckett, E.G. , D.L. Turcotte, L.H. Kellogg, H.V. Lokavarapu, Y. He and J.M. Robey, New Numerical Approaches To thermal Convection In A Compositionally Stratified Fluid,

DI23A-2589, American Geophysical Union Fall Meeting, Dec., 2016.

Geodynamo

- Cappanera, L., J.-L. Guermond, J. L  orat, C. Nore, Two spinning ways for precession dynamo, *Phys. Rev E.*, **93**, 043113, 2016.
- Guermond, J.-L., P. Mineev, High-order Time Stepping for the Incompressible Navier-Stokes equations, *SIAM J. Sci. Comput.*, **37**(6) A2656–A2681, 2015.
- Matsui, H., E. Heien, J. Aubert, J.M. Aurnou, M. Avery, B. Brown, B.A. Buffett, F. Busse, U.R. Christensen, C.J. Davies, N. Featherstone, T. Gastine, G.A. Glatzmaier, D. Gubbins, J.-L. Guermond, Y.-Y. Hayashi, R. Hollerbach, L. J. Hwang, A. Jackson, C.A. Jones, W. Jiang, L.H. Kellogg, W. Kuang, M. Landeau, P. Marti, P. Olson, A. Ribeiro, Y. Sasaki, N. Schaeffer, R.D. Simitev, A. Sheyko, L. Silva, S. Stanley, F. Takahashi, S. Takehiro, J. Wicht, and A.P. Willis, Performance benchmarks for a next generation numerical dynamo model, submitted to *Geochem. Geophys. Geosys*, **17**, DOI:10.1002/2015GC006159, 2016.
- Matsui, H., Thermal structure of the inner core boundary in numerical dynamos, Japan Geoscience Union Meeting 2016, May, 2016.
- Matsui, H. and CIG dynamo working group, Performance and accuracy benchmarks for a next generation numerical dynamo model, 15th international symposium on Study of Earth’s Deep Interior (SEDI), July, 2016.
- Matsui, H., Self-consistent thermal structure at the inner core boundary in dynamo simulations, 15th international symposium on Study of Earth’s Deep Interior (SEDI), July, 2016.
- Matsui, H. and B.A. Buffett, Implementation of dynamic sub-grid scale (SGS) model for dynamo simulations in a rotating spherical shell, GP23C-1354, American Geophysical Union Fall Meeting, Dec., 2016.
- Nakagawa, T. and H. Matsui, On the possible scenario of thermal evolution of Earth’s core with high thermal conductivity in a coupled core-mantle evolution model, SIT06-P20, Japan Geoscience Union Meeting 2016, May, 2016.
- Nakagawa, T., and B. Buffett, Long-term thermo-chemical evolution of Earth’s core, Earth-Life Science Institute Magma Oceanology workshop, July, 2016.
- Nakagawa, T., and B. Buffett, Effects of core-mantle chemical coupling in a coupled core-mantle evolution, 15th international symposium on Study of Earth’s Deep Interior (SEDI), July, 2016.
- Nakagawa, T., A coupled core-mantle evolution modeling with high thermal conductivity of Earth’s core, SE36-A002, Annual meeting Asia Oceania Geoscience Society, Aug., 2016.
- Nore, C., D. Castanon Quiroz, L. Cappanera, and J.-L. Guermond, Direct numerical simulation of the axial dipolar dynamo in the Von-K  rm  n-Sodium experiment, *Euro. Phys.*

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Sasaki, Y., Takehiro, S., Ishiwatari, M., Yamada, M., Critical mode of anelastic thermal convection in a rotating spherical shell depends on radial distribution of thermal diffusivity, 15th international symposium on Study of Earth's Deep Interior (SEDI), July, 2016.

Takehiro, S., Sasaki, Y., 2016: Penetration of mean zonal flows into an outer stable layer excited by MHD thermal convection in rotating spherical shells, 15th international symposium on Study of Earth's Deep Interior (SEDI), July, 2016.

Nore, C., H. Zaidi, F. Bouillault, A. Bossavit, J.-L. Guermond, Approximation of the time-dependent induction equation with advection using Whitney elements: application to dynamo action, *COMPEL - The international journal for computation and mathematics in electrical and electronic engineering*, **35**:1, 326–338, 2016.