

Harsha Lokavarapu

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Professional Preparation

University of California, Davis	MS	Geology	2017–
		Thesis advisor Louise H. Kellogg	
University of California, Davis	BS	Computer Science	2010-2015
University of California, Davis	Minor	Applied Mathematics	2010-2015

Computing Skills and Experiences

Languages

1. Continuous Integration Tools:

- (a) Jenkins - touched every CIG code
- (b) Travis

2. Code Development Contributions

- (a) Advanced Solver for Problems in Earth's ConvecTion (ASPECT)
- (b) Calypso
- (c) Generalized Reservoir Modeling (Ms. Thesis Project)

3. Parallel Processing/High Performance Computing (HPC)

- (a) NSF Texas Advanced Computing Center:
 - i. Stampede and Stampede 2.0 with Xeon Phi Processors
 - ii. Maverick - Nvidia K20 GPU cluster
- (b) Math and Physical Science (MPS) HPC Cluster
 - i. Ymir
 - ii. Peloton
- (c) SLURM
- (d) Experience - ran strong and weak scaling tests for
 - i. Calypso - published as poster at Fall AGU 2014
 - ii. ASPECT - As part of work associated with DSF paper (not included with published version)

4. Outside Interests:

- (a) Virtual Reality - (A-frame)
- (b) 3-D Design/Printing
- (c) Kereas, Tensorflow

Publications

Refereed Journal Publications

Submitted

L. H. Kellogg, D. L. Turcotte, M. Weisfeiler, H. Lokavarapu[®], S. Mukhopadhyay, (2018) “Implications of a Reservoir Model for the Evolution of Deep Carbon”, *Earth and Planetary Science Letters*, Ms. Ref. No.: EPSL-D-17-01055

Accepted

R. Gassmoeller, H. Lokavarapu[®], E. Heien, E. G. Puckett, and W. Bangerth, (2018) “Flexible and scalable particle-in-cell methods with adaptive mesh refinement for geodynamic computations”, *Geochemistry, Geophysics, Geosystems* manuscript 2018GC007508R [View Accepted Manuscript](#)

Appeared

E. G. Puckett, D. L. Turcotte, L. H. Kellogg, Y. He[†], J. M. Robey^{*}, and H. Lokavarapu[®] (2018) “New numerical approaches for modeling thermochemical convection in a compositionally stratified fluid”, Special issue of *Physics of the Earth and Planetary Interiors* associated with the 15th Studies of the Earth’s Deep Interior (SEDI) Symposium (*Phys. Earth. Planet. In.*) **276**:10–35, 10.1016/j.pepi.2017.10.004 [View Article](#)

Poster Presentations

L. H. Kellogg, H. Lokavarapu[®], D. L. Turcotte, and S. Mukhopadhyay (2017) “A reservoir model study of the flux of carbon from the atmosphere, to the continental crust, to the mantle”, *Annual Geophysical Union Fall Meeting 2017*

J. Jiang, A. P. Kaloti, H. R. Levinson, N. Nguyen, E. G. Puckett, and H. Lokavarapu[®] (2016) “Benchmark Results Of Active Tracer Particles In The Open Source Code ASPECT For Modelling Convection In The Earth’s Mantle”, *Annual Geophysical Union Fall Meeting 2016*

E. G. Puckett, D. L. Turcotte, L. H. Kellogg, H. Lokavarapu[®], Y. He[†], and J. M. Robey^{*} (2016) “New Numerical Approaches To thermal Convection In A Compositionally Stratified Fluid”, *Annual Geophysical Union Fall Meeting 2016*

H. Lokavarapu[®], and H. Matsui (2015) “Optimization of Parallel Legendre Transform using Graphics Processing Unit (GPU) for a Geodynamo Code”, *Annual Geophysical Union Fall Meeting 2015*

J. A. Russo, E. H. Studley, H. Lokavarapu[®], I. Cherkashin, and E. G. Puckett (2014) “A New Monotonicity-Preserving Numerical Method for Approximating Solutions to the Rayleigh-Benard Equations”, *Annual Geophysical Union Fall Meeting 2014*

H. Lokavarapu[®], H. Matsui, and E. M. Heien (2014) “Parallelization of the Legendre Transform for a Geodynamics Code”, *Annual Geophysical Union Fall Meeting 2014*

@ Undergraduate Student

* Graduate Student

† Postdoctoral Scholar