

Gautam Bisht

Atmospheric Sciences & Global Change Division
Pacific Northwest National Laboratory
902 Battelle Blvd
Richland, WA, 99354, USA

Office: +1 509-372-4776
Email: gautam.bisht@pnnl.gov
Website: www.gautambisht.org
ORCID, Google Scholar
GitHub ResearchGate

Research Interests

Understanding global terrestrial biophysical processes including subsurface thermal hydrology and land-atmosphere interaction by developing modular, numerically robust, parallel computational models.

Education

Ph.D., Environmental Engineering, Massachusetts Institute of Technology	2010
M.S., Environmental Engineering, University of Cincinnati	2004
B.Tech., Civil Engineering, Indian Institute of Technology, Kanpur, India	2002

Professional Experience

Earth Scientist , Pacific Northwest National Laboratory	2019 – present
Sr. Software Developer , Lawrence Berkeley National Laboratory	2018 – 2019
Software Developer , Lawrence Berkeley National Laboratory	2015 – 2018
Project Scientist , Lawrence Berkeley National Laboratory	2012 – 2015
Postdoctoral Research Associate , Oak Ridge National Laboratory	2010 – 2012
Graduate Research Assistant , Massachusetts Institute of Technology	2004 – 2010
Graduate Research Assistant , University of Cincinnati	2002 – 2004

Grants

Bisht, G. (Lead PI, PNNL), Adams, M., Brown, J., Engwirda, D., Johnson, J., Knepley, M., Kumar, M., and Tan, Z., *Capturing the Dynamics of Compound Flooding in E3SM*, 09/2022 - 08/2027, DOE Office of Biological and Environmental Research (SciDAC), DOE.

Bisht, G. (Lead PI, PNNL), Brown, J., Collier, N., Frederick, J., Hammond, G., Karra, S., Knepley, M. *Development of Terrestrial Dynamical Cores for E3SM*, 05/2018 - 03/2022, DOE Office of Biological and Environmental Research (SciDAC), DOE.

Liou, K.-N (Lead PI, UCLA), **Bisht, G.** (co-PI), Chaney, Hoffman, F., Lawrence, D., Leung, R., Shevliakova, E., *3D-Land Energy Exchanges: Harnessing High Resolution Terrestrial Information to Refine Atmosphere-to-Land interactions in Earth System Models*, 10/2019-09/2023, NOAA Climate Program Office.

Awards

ACME Outstanding Contribution Award, DOE	2015
Martin Family Society of Fellows for Sustainability, MIT	2006
Presidential Graduate Fellowship, MIT	Fall 2004

In Review Publications

3. Liao, C., Zhou, T., Xu, D., Tan, Z., **Bisht, G.**, Cooper, M., Engwirda, D., Li, H., and Leung, L. R., Topological relationship-based flow direction modeling stream burning and depression filling, in review, 2022.
2. Hao, D., **Bisht, G.**, Rittger, K., Stillinger, T., Bair, E., Gu, Y., and Leung, L. R.: Evaluation of snow processes over the Western United States in E3SM land model, EGUsphere [preprint], <https://doi.org/10.5194/egusphere-2022-1097>, 2022
1. Sinha, E., Bond-Lamberty, B., Calvin, K. V., Drewniak, B. A., Bisht, G., Bernacchi, C., Blakely, B. J., and Moore, C. E., The Impact of Crop Rotation and Spatially Varying Crop Parameters in the E3SM Land Model (ELMv2), in review, 2022.

Peer-Reviewed Publications

42. Hao, D., **Bisht, G.**, Rittger, K., Bair, E., He, C., Huang, H., Dang, C., Stillinger, T., Gu, Y., Wang, H., Qian, Y., and Leung, L. R.: Improving snow albedo modeling in the E3SM land model (version 2.0) and assessing its impacts on snow and surface fluxes over the Tibetan Plateau, Geosci. Model Dev., 16, 75–94, <https://doi.org/10.5194/gmd-16-75-2023>, 2023.
41. Golaz, J.-C., Van Roekel, L. P., Zheng, X., Roberts, A. F., Wolfe, J. D., Lin, W., et al. (2022). The DOE E3SM Model version 2: Overview of the physical model and initial model evaluation. Journal of Advances in Modeling Earth Systems, 14, e2022MS003156. <https://doi.org/10.1029/2022MS003156>.
40. Feng, D., Tan, Z., Engwirda, D., Liao, C., Xu, D., **Bisht, G.**, Zhou, T., Li, H.-Y., and Leung, L. R.: Investigating coastal backwater effects and flooding in the coastal zone using a global river transport model on an unstructured mesh, Hydrol. Earth Syst. Sci., 26, 5473–5491, <https://doi.org/10.5194/hess-26-5473-2022>, 2022.
39. Fang, Y., Leung, L. R., Koven, C. D., **Bisht, G.**, Detto, M., Cheng, Y., McDowell, N., Muller-Landau, H., Wright, S. J., and Chambers, J. Q.: Modeling the topographic influence on aboveground biomass using a coupled model of hillslope hydrology and ecosystem dynamics, Geosci. Model Dev., 15, 7879–7901, <https://doi.org/10.5194/gmd-15-7879-2022>, 2022.
38. Huang, M., Ma, P.-L., Chaney, N. W., Hao, D., **Bisht, G.**, Fowler, M. D., Larson, V. E., and Leung, L. R.: Representing surface heterogeneity in land–atmosphere coupling in E3SMv1 single-column model over ARM SGP during summertime, Geosci. Model Dev., 15, 6371–6384, <https://doi.org/10.5194/gmd-15-6371-2022>, 2022.
37. Xu, D., **Bisht, G.**, Zhou, T., Leung, L. R., and Pan, M. (2022). Development of Land-River Two-Way Hydrologic Coupling for Floodplain Inundation in the Energy Exascale Earth System Model. Journal of Advances in Modeling Earth Systems, e2021MS002772. <https://doi.org/10.1029/2021MS002772>.
36. Li, L., **Bisht, G.**, and Leung, L. R.: Spatial heterogeneity effects on land surface modeling of water and energy partitioning, Geosci. Model Dev., 15, 5489–5510, <https://doi.org/10.5194/gmd-15-5489-2022>, 2022.
35. Xu, D., **Bisht, G.**, Sargsyan, K., Liao, C., and Leung, L. R.: Using a surrogate-assisted Bayesian framework to calibrate the runoff-generation scheme in the Energy Exascale Earth System Model (E3SM) v1, Geosci. Model Dev., 15, 5021–5043, <https://doi.org/10.5194/gmd-15-5021-2022>, 2022
34. Cheng, Y., Leung, L.R., Huang, M., Koven, C., Detto, M., Knox, R., **Bisht, G.**, Bretfeld, M. and Fisher, R.A., 2022. Modeling the joint effects of vegetation characteristics and soil properties on ecosystem dynamics in a Panama tropical forest. Journal of Advances in Modeling Earth Systems, 14(1), p.e2021MS002603. <https://doi.org/10.1029/2021MS002603>

33. Hao, D., **Bisht, G.**, Huang, M., Ma, P.L., Tesfa, T., Lee, W.L., Gu, Y. and Leung, L.R., 2022. Impacts of sub-grid topographic representations on surface energy balance and boundary conditions in the E3SM Land Model: A case study in Sierra Nevada. *Journal of Advances in Modeling Earth Systems*, p.e2021MS002862. <https://doi.org/10.1029/2021MS002862>.
32. Liao, C., Zhou, T., Xu, D., Barnes, R., **Bisht, G.**, Li, H.Y., Tan, Z., Tesfa, T., Duan, Z., Engwirda, D. and Leung, L.R., 2022. Advances in hexagon mesh-based flow direction modeling. *Advances in Water Resources*, p.104099. <https://doi.org/10.1016/j.advwatres.2021.104099>.
31. Hao, D., **Bisht, G.**, Gu, Y., Lee, W.-L., Liou, K.-N., and Leung, L. R.: A parameterization of sub-grid topographical effects on solar radiation in the E3SM Land Model (version 1.0): implementation and evaluation over the Tibetan Plateau, *Geosci. Model Dev.*, 14, 6273–6289, <https://doi.org/10.5194/gmd-14-6273-2021>, 2021.
30. Ivanov, V.Y., Xu, D., Dwelle, M.C., Sargsyan, K., Wright, D.B., Katopodes, N., Kim, J., Tran, V.N., Warnock, A., Fatichi, S., Burlando, P., Enrica Caporali, E., Restrepo, P., Sanders, B. F., Chaney, M. M., Nunes, A. M. B., Nardi, F., Vivoni, E. R., Istanbulluoglu, E., **Bisht, G.**, and Bras, R. L. (2021). Breaking Down the Computational Barriers to Real-Time Urban Flood Forecasting. *Geophysical Research Letters*, 48(20), e2021GL093585. <https://doi.org/10.1029/2021GL093585>
29. Agee, E., He, L., **Bisht, G.**, Couvreur, V., Shahbaz, P., Meunier, F., Gough, C.M., Matheny, A.M., Bohrer, G. & Ivanov, V. (2021). Root lateral interactions drive water uptake patterns under water limitation. *Advances in Water Resources*, 151, p.103896. <https://doi.org/10.1016/j.advwatres.2021.103896>
28. Cheng, Y., Huang, M., Zhu, B., **Bisht, G.**, Zhou, T., Liu, Y., Song, F. & He, X. (2021). Validation of the Community Land Model Version 5 Over the Contiguous United States (CONUS) Using In Situ and Remote Sensing Data Sets. *Journal of Geophysical Research: Atmospheres*, 126(5), p.e2020JD033539. <https://doi.org/10.1029/2020JD033539>
27. Zhu, B., Huang, M., Cheng, Y., Xie, X., Liu, Y., **Bisht, G.**, & Chen, X. (2021). Impact of Vegetation Physiology and Phenology on Watershed Hydrology in a Semiarid Watershed in the Pacific Northwest in a Changing Climate. *Water Resources Research*, 57(3), e2020WR028394. <https://doi.org/10.1029/2020WR028394>
26. Wu, R., Chen, X., Hammond, G., **Bisht, G.**, Song, X., Huang, M., Niu, G.Y. and Ferre, T., 2021. Coupling surface flow with high-performance subsurface reactive flow and transport code PFLOTRAN. *Environmental Modelling & Software*, 137, p.104959. <https://doi.org/10.1016/j.envsoft.2021.104959>
25. Zhu, B., Huang, M., Cheng, Y., Xie, X., Liu, Y., Zhang, X., **Bisht, G.**, Chen, X., Missik, J. and Liu, H., 2020. Effects of irrigation on water, carbon, and nitrogen budgets in a semiarid watershed in the Pacific northwest: A modeling study. *Journal of Advances in Modeling Earth Systems*, 12(9), p.e2019MS001953. <https://doi.org/10.1029/2019MS001953>
24. Burrows, S.M., Maltrud, M., Yang, X., Zhu, Q., Jeffery, N., Shi, X., Ricciuto, D., Wang, S., **Bisht, G.**, Tang, J. and Wolfe, J., 2020. The DOE E3SM v1. 1 biogeochemistry configuration: Description and simulated ecosystem-climate responses to historical changes in forcing. *Journal of Advances in Modeling Earth Systems*, 12(9), p.e2019MS001766. <http://dx.doi.org/10.1029/2019ms001766>
23. Lawrence, D. M., Fisher, R. A., Koven, C. D., Oleson, K. W., Swenson, S. C., Bonan, G., ... & Zeng, X. (2019). The Community Land Model version 5: Description of new features, benchmarking, and impact of forcing uncertainty. *Journal of Advances in Modeling Earth Systems*, 11(12), 4245-4287. <https://doi.org/10.1029/2018MS001583>

22. Cai, X., Riley, W. J., Zhu, Q., Tang, J., Zeng, Z., **Bisht, G.**, & Randerson, J. T. (2019). Improving representation of deforestation effects on evapotranspiration in the E3SM land model. *Journal of Advances in Modeling Earth Systems*, 11(8), 2412-2427. <https://doi.org/10.1029/2018MS001551>
21. Zhu, Q., Riley, W. J., Tang, J., Collier, N., Hoffman, F. M., Yang, X., & **Bisht, G.** (2019). Representing nitrogen, phosphorus, and carbon interactions in the E3SM land model: Development and global benchmarking. *Journal of Advances in Modeling Earth Systems*, 11(7), 2238-2258. <https://doi.org/10.1029/2018MS001571>
20. **Bisht, G.**, & Riley, W. J. (2019). Development and verification of a numerical library for solving global terrestrial multi-physics problems. *Journal of Advances in Modeling Earth Systems*, 11. <https://doi.org/10.1029/2018MS001560>
19. Golaz, J.-C., Caldwell, P. M., Van Roekel, L. P., Petersen, M. R., Tang, Q., Wolfe, J. D., et al (2019). The DOE E3SM coupled model version 1: Overview and evaluation at standard resolution. *Journal of Advances in Modeling Earth Systems*, 11. <https://doi.org/10.1029/2018MS001603>
18. **Bisht, G.**, Riley, W. J., Hammond, G. E., and Lorenzetti, D. M.: Development and evaluation of a variably saturated flow model in the global E3SM Land Model (ELM) version 1.0, *Geosci. Model Dev.*, 11, 4085-4102, <https://doi.org/10.5194/gmd-11-4085-2018>, 2018.
17. Tran, A. P., Dafflon, B., **Bisht, G.**, and Hubbard, S. S., “Spatial and temporal variations of thaw layer thickness and its controlling factors identified using time-lapse electrical resistivity tomography and hydro-thermal modeling,” *Journal of Hydrology*, 561, 751-763, <https://doi.org/10.1016/j.jhydrol.2018.04.028>, 2018.
16. **Bisht, G.**, Riley, W. J., Wainwright, H. M., Dafflon, B., Yuan, F., and Romanovsky, V. E., “Impacts of microtopographic snow redistribution and lateral subsurface processes on hydrologic and thermal states in an Arctic polygonal ground ecosystem: a case study using ELM-3D v1.0,” *Geosci. Model Dev.*, 11, 61-76, <https://doi.org/10.5194/gmd-11-61-2018>, 2018.
15. **Bisht, G.**, Huang, M., Zhou, T., Chen, X., Dai, H., Hammond, G. E., Riley, W. J., Downs, J. L., Liu, Y., and Zachara, J. M., “Coupling a three-dimensional subsurface flow and transport model with a land surface model to simulate stream-aquifer-land interactions (CP v1.0),” *Geosci. Model Dev.*, 10, 4539-4562, <https://doi.org/10.5194/gmd-10-4539-2017>, 2017.
14. Dwivedi, D., Steefel, I. C., Arora, B., and **Bisht, G.**, “Impact of intra-meander hyporheic flow on nitrogen cycling” *Procedia Earth and Planetary Science*, 17, 404-407, <https://doi.org/10.1016/j.proeps.2016.12.102>, 2017.
13. Liu, Y., **Bisht, G.**, Subin, Z. M., Riley, W. J., Pau, and G. S. H., “A Hybrid Reduced-Order Model of Fine-Resolution Hydrologic Simulations at a Polygonal Tundra Site,” *Vadose Zone Journal*, 15(2), <https://doi.org/10.2136/vzj2015.05.0068>, 2016.
12. Kumar, J., Collier, N., **Bisht, G.**, Mills, R. T., Thornton, P. E., Iversen, C. M., and Romanovsky, V., “Modeling the spatiotemporal variability in subsurface thermal regimes across a low-relief polygonal tundra landscape,” *The Cryosphere*, 10, 2241-2274, <https://doi.org/10.5194/tc-10-2241-2016>, 2016.
11. Tang, G., Yuan, F., **Bisht, G.**, Hammond, G. E., Lichtner, P. C., Kumar, J., Mills, R. T., Xu, X., Andre, B., Hoffman, F. M., Painter, S. L., and Thornton, P. E., “Addressing numerical challenges in introducing a reactive transport code into a land surface model: a biogeochemical modeling proof-of-concept with CLM-PFLOTRAN 1.0,” *Geosci. Model Dev.*, 9, 927-946, <https://doi.org/10.5194/gmd-9-927-2016>, 2016.
10. Shi, X., Thornton, P. E., Ricciuto, D. M., Hanson, P. J., Mao, J., Sebestyen, S. D., Griffiths, N. A., and **Bisht, G.**, “Representing northern peatland microtopography and hydrology within the Community Land Model,” *Biogeosciences*, 12, 6463-6477, <https://doi.org/10.5194/bg-12-6463-2015>, 2015.

9. Pau, G. S. H., **Bisht, G.**, and Riley, W. J., "A reduced-order modeling approach to represent subgrid-scale hydrological dynamics for land-surface simulations: application in a polygonal tundra landscape", *Geosci. Model Dev.*, 7, 2091-2105, <https://doi.org/10.5194/gmd-7-2091-2014>, 2014.
8. **Bisht, G.**, and Bras, R. L., "Estimation of net radiation from the Moderate Resolution Imaging Spectroradiometer over the Continental United States," *IEEE Trans. of Geosciences and Remote Sensing*, 49(6), 2448-2462, 201, <https://doi.org/10.1109/TGRS.2010.2096227>, 2011.
7. Knox, R., **Bisht, G.**, Wang, J., Bras, R., "Precipitation Variability over the Forest-to-Nonforest Transition in Southwestern Amazonia," *J. Climate*, 24, 2368-2377, <https://doi.org/10.1175/2010JCLI3815>, 2011.
6. **Bisht, G.**, and Bras, R. L., "Estimation of net radiation from the MODIS data under all sky conditions: Southern Great Plains case study," *Remote Sensing of Environment*, 114(7), 1522-1534, <https://doi.org/10.1016/j.rse.2010.02.007>, 2010.
5. Wang, J., Changnon, F. J. F., Williams, E. R., Betts, A. K., Renno, N. O., Machado, L. A. T., **Bisht, G.**, Knox, R., and Bras, R., "The impact of deforestation in the Amazon basin on cloud climatology," *PNAS*, 106(10), 3670-3674, <https://doi.org/10.1073/pnas.0810156106>, 2009.
4. Vivoni, E.R., Rinehart, A.J., Mendez-Barroso, L.A., Aragon, C.A., **Bisht, G.**, Cardenas, M.B., Engle, E., Forman, B.A., Frisbee, M.D., Gutierrez-Jurado, H.A., Hong, S., Mahmood, T.H., Tai, K., and Wyckoff, R.L., "Vegetation Controls on Soil Moisture Distribution in the Valles Caldera, New Mexico, during the North American Monsoon," *Ecohydrology*, 1(3): 225-238, <https://doi.org/10.1002/eco.11>, 2008.
3. Batra, N., Shafiqul Islam, S., Venturini, V., **Bisht, G.**, and Jiang, L., "Estimation and comparison of evapotranspiration from MODIS and AVHRR sensors for clear sky days over the Southern Great Plains," *Remote Sensing of Environment*, 103(1), 1-15, <https://doi.org/10.1016/j.rse.2006.02.019>, 2006.
2. **Bisht, G.**, Venturini, V., Islam, S., and Jiang, L., "Estimation of Net Radiation Using MODIS (Moderate Resolution Imaging Spectroradiometer) Terra data for clear sky days," *Remote Sensing of Environment*, 97(1), 52-6, <https://doi.org/10.1016/j.rse.2005.03.014>, 2005.
1. Venturini, V., **Bisht, G.**, Islam, S., Jiang, L., "Comparison of evaporative fractions estimated from AVHRR and MODIS sensors over South Florida," *Remote Sensing of Environment*, 93(1-2), 77-86, <https://doi.org/10.1016/j.rse.2004.06.020>, 2004.

Conference Presentations and Seminars

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110. Hao, D., **Bisht, G.**, Lee, W.L., Gu, Y., Ruby, L., Tesfa, T., Huang, M. and Ma, P.L., 2021, December. Representations of sub-grid topographic heterogeneity and their effects on surface energy balance and boundary conditions in the E3SM Land Model. In AGU Fall Meeting Abstracts (Vol. 2021, pp. H12B-01).
 109. Tao, J., Zhu, Q., Riley, W., **Bisht, G.**, Eklof, J. and Neumann, R., 2021, December. The role of advective heat transfer in affecting permafrost thaw and methane emissions at a hillslope thermokarst bog. In AGU Fall Meeting Abstracts (Vol. 2021, pp. C55E-10).
 108. Sinha, E., Calvin, K., Bond-Lamberty, B., Drewniak, B., **Bisht, G.**, Bernacchi, C., Blakely, B. and Moore, C., 2021, December. Assessing the impact of replacing corn with second generation perennial bioenergy crops in the US-Midwest. In AGU Fall Meeting Abstracts (Vol. 2021, pp. GC41D-03).
 107. Huang, M., Ma, P.L., Leung, L.R., Chaney, N., Hao, D., **Bisht, G.** and Fowler, M., 2021, December. Representation of surface heterogeneity impact in E3SM: Experience from single-column model simulations over ARM SGP during summertime. In AGU Fall Meeting Abstracts (Vol. 2021, pp. H12B-02).

106. Xu, D., **Bisht, G.** and Sargsyan, K., 2021, December. Use of an Uncertainty Quantification Framework to Calibrate the Runoff Generation Scheme in the Energy Exascale Earth System Land Model. In AGU Fall Meeting Abstracts (Vol. 2021, pp. H55I-0840).
105. **Bisht, G.**, Engwirda, D., Feng, D., Hunke, E., Leung, L.R., Liao, C., Shi, M., Tan, Z., Xu, D. and Zhou, T., 2021, December. A unified model coupling of the land, river, and ocean models in E3SM to simulate coastal processes. In AGU Fall Meeting Abstracts (Vol. 2021, pp. OS35A-01).
104. Liao, C., Zhou, T., Xu, D., **Bisht, G.**, Li, H., & Leung, L. R. (2020, December). Evaluation of river routing on a hexagonal grid for coupled earth system modeling. In AGU Fall Meeting 2020. AGU.
103. Zhang, J., Condon, L. E., Moulton, J. D., Zhang, Y., & **Bisht, G.** (2020, December). Comparison between multiple physical-based hydrologic models in modeling groundwater-surface water interactions in a coastal watershed. In AGU Fall Meeting Abstracts (Vol. 2020, pp. H174-02).
102. Cheng, Y., Leung, L.R., Huang, M., Knox, R.G., Koven, C., **Bisht, G.**, Bretfeld, M., Detto, M., Fisher, R., Shuman, J.K. & Xu, C., 2020, December. Dry season soil moisture dynamics along secondary forest succession in Panama: impacts of soil hydraulic properties vs. tree root profile. In AGU Fall Meeting Abstracts (Vol. 2020, pp. B127-04).
101. Wolfram, P.J., Brus, S.R., Petersen, M.R., Cao, Z., Engwirda, D., Maltrud, M.E., Asay-Davis, X., Roberts, A., Wolfe, J., Zhou, T. & **Bisht, G.**, 2020, February. Global to coastal multiscale modeling in the Energy Exascale Earth System Model (E3SM). In Ocean Sciences Meeting 2020. AGU.
100. Holm, J.A., Riley, W.J., Knox, R.G., **Bisht, G.**, Xu, C., Ricciuto, D.M., Sargsyan, K., Christoffersen, B. & Koven, C., 2019, December. Using Dynamic Vegetation Modeling to Explore Boreal Forest Canopy-cover Shifts Under Water Stress and Changing Climate. In AGU Fall Meeting Abstracts (Vol. 2019, pp. B24C-07).
99. Collier, N., Brown, J., Knepley, M., & **Bisht, G.** (2019, December). Choosing a Numerical Method for a Terrestrial Dynamical Core. In AGU Fall Meeting Abstracts (Vol. 2019, pp. T51C-05).
98. Zhu, B., Huang, M., Cheng, Y., Xie, X., Liu, Y., Zhang, X., & Bisht, G. (2019, December). Effects of irrigation on water, carbon and nitrogen budgets in a semi-arid watershed. In AGU Fall Meeting Abstracts (Vol. 2019, pp. B43B-02).
97. Huang, M., Chen, X., **Bisht, G.**, Fang, Y., Hammond, G.E., Shuai, P., Zhang, X., Zhu, B., Liu, H., Arntzen, E. & Gao, Z., 2019, December. Understanding Ecohydrology in a Managed Watershed through Integrated Modeling and Observations. In AGU Fall Meeting Abstracts (Vol. 2019, pp. H22F-02).
96. Tao, J., Zhu, Q., Riley, W.J., Neumann, R.B. & **Bisht, G.**, 2019, December. Improved Simulation of Cold-season Methane Emissions over Alaska's Permafrost with the E3SM Land Model (ELM). In AGU Fall Meeting Abstracts (Vol. 2019, pp. B44E-07).
95. Cheng, Y., Chen, M., Huang, M., **Bisht, G.**, Sinha, E., Vernon, C. R., & Graham, N. T. (2019, December). Implications of bioenergy crop expansion on water availability and nitrogen loading over the conterminous United States. In AGU Fall Meeting Abstracts (Vol. 2019, pp. GC24B-06).
94. Knox, R., Koven, C., Riley, W.J., Shuman, J.K., Walker, A.P., **Bisht, G.**, Holm, J., Fisher, R., Lemieux, G., Zhu, Q. & Tang, J., 2019, December. Evaluation of Nutrient Allocation Hypotheses in the Functionally Assembled Terrestrial Ecosystem Simulator (FATES). In AGU Fall Meeting Abstracts (Vol. 2019, pp. H13Q-1995).

93. Burrows, S.M., Maltrud, M.E., Yang, X., Zhu, Q., Jeffery, N., Shi, X., Ricciuto, D.M., Wang, S., **Bisht, G.**, Tang, J. & Wolfe, J., 2019, December. The DOE E3SM Coupled Model v1. 1 Biogeochemistry Configuration and Coupled Carbon-Climate Experiments. In AGU Fall Meeting Abstracts (Vol. 2019, pp. B53K-2537).
92. **Bisht, G.**, Brown, J., Collier, N., Frederick, J., Hammond, G. E., Karra, S., & Knepley, M. (2019, December). The development of the Terrestrial Dynamical core (TDycore) library and it's coupling with E3SM. In AGU Fall Meeting Abstracts (Vol. 2019, pp. A13H-3036).
91. Agee, E., Ivanov, V. , Oliveira, R. S., Brum Jr., M., Saleska, S. R., **Bisht, G.**, Prohaska, N., Taylor, T., Oliveira Jr, R. C., and Restrepo-Coupe, N., (2018), Quantifying the contribution of root systems to community and individual drought resilience in the Amazon rainforest, CMWR, 3-7 June.
90. Huang, M., Chen, X., **Bisht, G.**, Riley, W., Hammond, G., Liu, H., Zhang, X., Fang, Y., and Gomez-Velez, J., (2018) Quantifying Stream-Aquifer-Land Interactions along a large dam-regulated River Corridor using Integrated Modeling and Observations, CMWR, 3-7 June.
89. Yuan, F., Wang, G., Painter, S., Tang, G., Xu, X., Kumar, J., **Bisht, G.**, Hammond, G. E., Mills, R. T., Thornton, P. E., and Wullschleger., (2017), Effect of Freeze-Thaw Cycles on Soil Nitrogen Reactive Transport in a Polygonal Arctic Tundra Ecosystem at Barrow AK Using 3-D Coupled ALM-PFLOTRAN, AGU Fall Meeting, 11-15 Dec.
88. Agee, E., Ivanov, V. , Oliveira, R. S., Brum Jr., M., Saleska, S. R., **Bisht, G.**, Prohaska, N., Taylor, T., Oliveira Jr, R. C., and Restrepo-Coupe, N., (2017), Quantifying the contribution of root systems to community and individual drought resilience in the Amazon rainforest, AGU Fall Meeting, 11-15 Dec.
87. Holm, J. A., Knox, R. G., Koven, C., Riley, W. J., **Bisht, G.**, Fisher, R., Christoffersen, B. O., Dietze, M., and Chambers, J. Q. (2017), ALM-FATES: Using dynamic vegetation and demography to capture changes in forest carbon cycling and competition at the global scale, AGU Fall Meeting, 11-15 Dec.
86. **Bisht, G.**, Riley, W. J., (2016), Use of composable solvers to represent multiphysics hydrologic and thermal processes in the ACME Land Model, AGU Fall Meeting, 12-16 Dec.
85. Agee, E., He, L., **Bisht, G.**, Gough, C. M., Couvreur, V., Matheny, A. M., Bohrer, G., Ivanov, V. Y., (2016), Root water uptake and lateral interactions among root systems in a temperate forest, AGU Fall Meeting, 12-16 Dec.
84. Knox, R. G., Koven, C., Fishter, R., Andre, R., **Bisht, G.**, Vertenstein, M., Riley, W. J., Sacks, W., Kluzeck, E. B., Lawrence, D. M., (20016), Software and Process Developments in the Functionally Assembled Terrestrial Ecosystem Simulator (FATES), AGU Fall Meeting, 12-16 Dec.
83. Huang, M., **Bisht, G.**, Zhou, T., Chen, X., Dai, H., Hammond, G. E., Riley, W. J., Downs, J., Liu, Y., Zachara, J. M., (2016), Coupling a three-dimensional subsurface flow model with a land surface model to simulate stream-aquifer-land interactions, AGU Fall Meeting, 12-16 Dec.
82. Yuan, F., Painter, S., Thornton, P. E., Xu, X., Tang, G., Kumar, J., **Bisht, G.**, Hammond, G. E., Mills, R. T., Wullschleger, S. D. (2016), Evaluating an Explicitly Coupled 3-D Soil Thermal-Hydrology and Carbon Nitrogen Reactive Transport Land Surface Model - CLM-PFLOTRAN, AGU Fall Meeting, 12-16 Dec.
81. Forsythe, L., Smits, K. M., Riley, W. J., **Bisht, G.** (2016), Utilization of data and modeling at multiple scales to compare varying formulations of the soil resistance term affecting evaporative flux from the soil surface, AGU Fall Meeting, 12-16 Dec.

80. Fang, Y., Duan, Z., Leung, R. L., **Bisht, G.**, Li, H-Y., Maxwell, R. M., Wigmosta, W., (2016), Hydrological modeling in a small central Amazonian watershed: Insights from one to three-dimensional models, AGU Fall Meeting, 12-16 Dec.
79. **Bisht, G.**, and Riley, W. J. (2016), Composable solvers for multiphysics problems in ALM, ACME Project Fall Meeting, 9-11 Nov.
78. Knox, R., Koven, C., Andre, B., Fisher, R., **Bisht, G.**, Vertenstein, M., Riley, W. J., Sacks, W., Kluzek, E., Lawrence, D., (2016), An Update on Software Developments in the FATES, ACME Project Fall Meeting, 9-11 Nov.
77. Zhu, Q., Riley, W. J., Tang, J., Hoffman, F., **Bisht, G.**, Yang, X., Mu, M., Randerson, J., (2016), Robust representation of multi-nutrient limitations in ALMv1, ACME Project Fall Meeting, 9-11 Nov.
76. **Bisht, G.**, Riley, W. J., Knox, R. (2016), Vertically resolved biophysics in ALM for soil-plant-atmosphere continuum, ACME All Hands Meeting, 5-7 June.
75. Knox, R., **Bisht, G.**, Koven, C., Andre, B., Fisher, R., Holm, J., Yin, J., Jacob, R., Kueppers, L., and Chambers, J., (2017), Integrating the Functionally Assembled Terrestrial Ecosystem Simulator (FATES) into the Accelerated Climate Model for Energy (ACME), ACME All Hands Meeting, 5-7 June.
74. Huang, M., Leung, R. L., **Bisht, G.**, (2017), Runoff partitioning and its impact on water and energy budgets in the ACME land model, ACME All Hands Meeting, 5-7 June.
73. Koven, C., Chambers, J., Kueppers, L., Knox, R., Fisher, R., **Bisht, G.**, Ander, B., Xu, C., Christoffersen, B., Holm, J., Riley, W. J., Lawrence, D., Agarwal, D., Davies, S., Keller, M., Leung, R. L., McDowell, N., Norby, R., Rogers, A., (2017), Overviews of the NGEE-Tropics Project and FATES, a Demographic Vegetation Model for the ACME ESM, ACME All Hands Meeting, 5-7 June.
72. **Bisht, G.**, Riley, W. J., Lorenzetti, D., and Tang, J. (2015), Development of a 3D Soil-Plant-Atmosphere Continuum (SPAC) coupled to a Land Surface Model, AGU Fall Meeting, 14-18 Dec.
71. Tran, A. P., Dafflon, B., Hubbard, S. S., **Bisht, G.**, Peterson, J., Ulrich, C., Romanovsky, V. E., Kneafsey, T. J., and Wu, Y. (2015), Coupled Monitoring and Inverse Modeling to Investigate Surface - Subsurface Hydrological and Thermal Dynamics in the Arctic Tundra, AGU Fall Meeting, 14-18 Dec.
70. Agee, E., Ivanov, V. Y., He, L., **Bisht, G.**, Shahbaz, P., Fatichi, S., Gough, C. M., Couvreur, V., Matheny, A. M., and Bohrer, G. (2015), Compensatory Root Water Uptake of Overlapping Root Systems, AGU Fall Meeting, 14-18 Dec.
69. Dwivedi, D., Steefel, C. I., Arora, B., **Bisht, G.**, and Williams, K. H. (2015), The Role of Hyporheic Zones in Cycling of Carbon and Nitrogen, AGU Fall Meeting, 14-18 Dec.
68. Huang, M., **Bisht, G.**, Chen, X., Hammond, G., Zachara, J., Riley, W. J., Downs, J. , Liu,Y., and Zhou, T. (2015), The Role of Groundwater and River Water Interactions in Modulating Land Surface and Subsurface States and Fluxes: A Local-Scale Case Study along the Columbia River Shoreline, AGU Fall Meeting, 14-18 Dec.
67. Yuan, F., Thornton, P. E., Tang, G., Xu, X., Kumar, J., Iversen, C. M., **Bisht, G.**, Hammond, G. E., Mills, R. T., and Wullschleger, S. D. (2015), Effects of Spatial N nutrient mobility relevant to plants, soils and microtopography on plant growth and soil organic matter accumulation by using coupled CLM-PFLOTTRAN biogeochemical model in an Area in NGEE-Arctic Intensive Study Sites, Barrow, AK, AGU Fall Meeting, 14-18 Dec.
66. **Bisht, G.**, and Riley, W. J. (2015), Variably Saturated Flow Model in ALM, ACME Project Fall Meeting, 2-4 Nov.

65. **Bisht, G.** and Riley, W. J. (2015), Biophysics development for the ACME Land Model Version 2, ACME All Hands Meeting, 7-9 June.
64. Huang, M., Zhou, T., Chen, X., Voisin, N., **Bisht, G.**, Dai, H., Hammond, G., Hou, Z., Stegen, J., Riley, W. J., Fredrickson, J., and Zachara, J. (2015), Potential impacts of projected hydro-climate changes on groundwater and surface water interactions along the Columbia River Corridor, TES/SBR Joint Investigators Meeting, 26 - 27 April.
63. **Bisht., G.** and Riley, W. J. (2015), Use of composable solvers to represent multiphysics hydrologic and thermal processes in CLM, In the 2015 Land Model Working Group Meeting, Boulder, CO, 2-4 March.
62. **Bisht, G.**, Riley, W. J. and Wainwright, H., (2015), Topographic controls on scaling of hydrologic and thermal processes in polygonal ground features of an Arctic ecosystem, present at the 2015 TES/SBR Joint Investigators Meeting, 28 - 29 April.
61. Huang, M., **Bisht, G.**, Chen, X., Hammond, G., Zachara, J., Riley, W. J., Downs, J., and Liu, Y., (2015), The role of groundwater and river water interactions in modulating land surface and subsurface states and fluxes: A Local-scale case study along the Columbia river shoreline, , present at the 2015 TES/SBR Joint Investigators Meeting, 28 - 29 April.
60. Liu, Y., Pau, G. S. H., **Bisht, G.**, and Riley, W. J. (2014), Reduce-order modeling of fine resolution hydrologic and biogeochemical simulations at NGEE-Arctic study sites, In Complex Soil System Conference, Berkeley, CA, 3-5 September.
59. **Bisht, G.** and Riley, W. J., (2014), Topographic controls on scaling of hydrologic and thermal processes in Arctic ecosystem, In 3rd NGEE-Arctic All Hands Meeting, 13-14 Dec.
58. **Bisht, G.**, Riley, W. J., Collier, N., and Kumar, J. (2014, December). Topographic controls on scaling of hydrologic and thermal processes in polygonal ground features of an Arctic ecosystem: A case study using idealized non-isothermal surface-subsurface simulations, AGU Fall Meeting, 15-19 Dec.
57. Pau, G. S. H., **Bisht, G.**, Liu, Y., Riley, W. J., and Shen, C. (2014, December). A POD Mapping Approach to Emulate Land Surface Models, AGU Fall Meeting, 15-19 Dec.
56. Collier, N., **Bisht, G.**, and Kumar, J. (2014, December). Challenges to large-scale simulations of permafrost freeze-thaw dynamics, AGU Fall Meeting, 15-19 Dec.
55. Niu, J., Riley, W. J., Melack, J. M., Shen, C., and **Bisht, G.** (2014, December). Quantifying Water Budgets in Amazonian Watershed Using a Coupled Subsurface-Land Surface Process Model, AGU Fall Meeting, 15-19 Dec.
54. Yuan, F., Tang, G., Xu, X., Kumar, J., **Bisht, G.**, Hammond, G. E., Mills, R. T., and Wullschleger, S. D. (2014, December). Explicitly Synchronizing Soil Water and Carbon Nitrogen Reactive Transport Using CLM-PFLOTRAN: Does Sequential or Synchronized Implementing of Soil Processes Matter to Soil C Stocks?, AGU Fall Meeting, 15-19 Dec.
53. **Bisht, G.**, Riley, W. J., Pau, G. S. H., Subin, Z., and Liu, Y. (2014), Micro-topographic controls on scaling of hydrologic and thermal processes in a polygonal Arctic ecosystem, In 3rd NGEE-Arctic All Hands Meeting, 13-14 Dec.
52. **Bisht, G.**, Pau, G. S. H., and Riley, W. J. (2014), Development of reduced order models to capture subgrid scale soil moisture dynamics in a polygonal tundra landscape, 2014 TES SBR PI Meeting, Potomac, MD, 6-7 May.
51. **Bisht, G.**, and Riley, W. J. (2014), Progress towards development of a variably saturated subsurface model for CLM, Climate Modeling PI Meeting, Potomac, MD, 12-14 May.

50. Pau, G. S. H., **Bisht, G.**, and Riley, W. J. (2014), Application of POD Mapping Method in Land Surface Models: A multiscale Reduced-Order Method for Integrated Earth System Modeling, Climate Modeling PI Meeting, Potomac, MD, 12-14 May.
49. **Bisht, G.**, and Riley, W. J. (2013), Scaling of soil moisture in presence of polygonal ground features in Arctic ecosystem, Fall AGU Meeting, 9-13 Dec.
48. Dwivedi, D., Riley, W. J., and **Bisht, G.** (2013), Mechanistic Representation of Soil C Dynamics: for Arctic Ecosystem, Fall AGU Meeting, 9-13 Dec.
47. Hammond, G. E., Andre, B., **Bisht, G.**, Johnson, T., Karra, S., Lichtner, P. C., and Mills, R. T. (2013), Open-Source Development of the Petascale Reactive Flow and Transport Code PFLOTRAN, Fall AGU Meeting, 9-13 Dec.
46. He, L., Ivanov, V. Y., **Bisht, G.**, Schneider, C., Kalbacher, T., and Hildebrandt (2013), Regional impacts of climate change on a temperate mixed forest: species-specific microscopic root water uptake strategies, Fall AGU Meeting, 9-13 Dec.
45. Karra, S., **Bisht, G.**, Lichtner, P. C., and Hammond, G. E. (2013), Coupling geomechanics with flow and reactive transport in PFLOTRAN for subsurface applications, Fall AGU Meeting, 9-13 Dec.
44. Kumar, J., **Bisht, G.**, Liljedahl, A., Mills, R. T., Karra, S., Painter, S. L., and Thornton, P. E., (2013), Modeling Active Layer and Permafrost Dynamics of Ice Wedge Polygon Dominated Arctic Ecosystems, Fall AGU Meeting, 9-13 Dec.
43. Mills, R. T., **Bisht, G.**, Hammond, G. E., Andre, B. J., Kumar, J., Karra, S., Painter, S. L., Lichtner, P. C., Tang, G., Yuan, F., Xu, X., Hoffman, F. M., Riley, W. J., and Thornton, P. E., (2013), Development of a Process-Rich Modeling Framework for Arctic Ecohydrology Using the Open-Source PFLOTRAN and CLM models, Fall AGU Meeting, 9-13 Dec.
42. Thornton, P. E., Kumar, J., Painter, S. L., **Bisht, G.**, Hammond, G. E., Mills, R. T., and Tang, G., (2013), A multi-scale approach to representing tundra permafrost dynamics in a coupled climate system model, Fall AGU Meeting, 9-13 Dec.
41. **Bisht, G.** (2013), NGEE-Artic Modeling Track 1 Developments, 2nd NGEE-Arctic All Hands Meeting, 7-8 Dec.
40. **Bisht, G.**, and Riley, W. J., Development of a variably saturated subsurface flow model with lateral subsurface processes in the Community Land Model, the CESM Annual Workshop, 17-20 June 2013.
39. **Bisht, G.**, Riley, W. J., Dwivedi, D., and Hammond, G., Development of a Sub-meter Resolution Modeling Framework for Arctic Ecosystem: Coupling of CLM and PFLOTRAN and Spatial Scaling Results, TES/SBR Joint Investigators Meeting, May 14-15 (2013).
38. Riley, W. J., **Bisht, G.**, Ghimire, B., Koven, C. D., and Tang, Y., Developing an improved CLM for High-Latitude Ecosystems, TES/SBR Joint Investigators Meeting, May 14-15 (2013).
37. Kumar, J., **Bisht, G.**, Hammond, G., Hoffman, F. M., Mills, R. T., Painter, S., Tang, G., and Thornton, P. E., Multi-Scale Modeling of Eco-Hydrologic Processes in Arctic Ecosystems, TES/SBR Joint Investigators Meeting, May 14-15 (2013).
36. **Bisht, G.**, and Riley, W. J., A proposed model development strategy to incorporate lateral subsurface processes within CLM, CESM Land and Biogeochemistry Working Group Meeting, February 20-22 (2013).
35. Kumar, J., **Bisht, G.**, Karra, S., Hoffman, F. M., Mills, R. T., and Thornton, P. E., Multi-scale modeling of eco-hydrologic processes in Arctic ecosystems, CESM Land and Biogeochemistry Working Group Meeting, February 20-22 (2013).

34. **Bisht, G.**, Kumar, J., Lijedahl, A. K., Riley, W. J., and Thornton, P., Scaling of hydrologic flows in polygonal ground within an Arctic ecosystem, Fall AGU Meeting, 3-7 Dec.
33. Mills, R. T., **Bisht, G.**, Hammond, G., Lichtner, P., Kumar, J., Hoffman, F., Watson, D., and Brooks, S. (2012), Coupled Simulation of Surface-Subsurface Hydrologic Processes with the Open-Source Flow and Reactive Transport Code PFLOTRAN, Geological Society of America Annual Meeting, November 5.
32. **Bisht, G.**, Hammond, G. E., Hoffman, F. M., Kumar, J., Lichtner, P. C., Mills, R. T., and Thornton, P. E. (2012), Improving Surface and Subsurface Hydrologic Processes within the Community Land Surface Model (CLM): Coupling PFLOTRAN and CLM presented at XIX International Conference on Water Resources, University of Illinois at Urbana-Champaign June 17-22.
31. **Bisht, G.**, Ricciuto, D. M., Thornton, P. E., Shi, X., and Mao, J. (2012), Evaluating point-CLM4 simulations against multiple NACP observational datasets and implications for global simulations, Terrestrial Ecosystem Science PI meeting, April 23-24.
30. **Bisht, G.**, Homan, F. M., Kumar, J., Mills, R. T., and Thornton, P.E. (2012), A Proposed Model Development Strategy to Incorporate 3-D Subsurface Hydrologic and Thermal Processes within the Community Land Model, presented the CCSM Land Model Working Group meeting, 27 February - 2 March.
29. **Bisht, G.**, Mills, R. T., Hoffman, F. M., Thornton, P. E., Lichtner, P. C., and Hammond, G. E (2011), Incorporating 3-D Subsurface Hydrologic Processes within the Community Land Surface Model (CLM): Coupling PFLOTRAN and CLM, H41C-1046, Fall AGU Meeting, 5-9 Dec.
28. Thornton, P. E., **Bisht, G.**, and D.M. Ricciuto (2011), Evaluating and improving land surface model predictions using site-level observations, B51R-02, Fall AGU Meeting, 5-9 Dec.
27. Branstetter, M. L., Thornton, P. E., **Bisht, G.** D.M. Ricciuto, D. M., Yang, X. (2011), Overview of Recent Progress at Oak Ridge National Laboratory toward Next Generation Land Components of Earth System Models, B31D-0353, Fall AGU Meeting, 5-9 Dec.
26. **Bisht, G.**, Mills, R. T., Hoffman, F. M., Thornton, P. E., Lichtner, P. C., and Hammond, G. E (2011), Progress towards Continental-Scale Studies of Subsurface Hydrologic Processes in the United States using PFLOTRAN and CLM, SciDAC, 10 - 14 July.
25. Lichtner, P.C., **Bisht, G.**, Hammond, G., Kumar, J., Lu, C., Mills, R. T., Moulton, D., Philip, B., Smith, B., Svyatskiy, D., and Valocchi, A., (2011), PFLOTRAN: Next-Generation Peta-Scale Subsurface Reactive Flow and Transport Code, SciDAC, 10 - 14 July.
24. **Bisht, G.**, Mills, R. T., Hoffman, F. M., Thornton, P. E., Lichtner, P. C., and Hammond, G. E (2011), Progress towards Continental-Scale Studies of Subsurface Hydrologic Processes in the United States using PFLOTRAN and CLM, 16th Annual CESM Workshop, Breckenridge, CO, 20 -23 June.
23. Thornton, P. E., **Bisht, G.**, and Ricciuto, D. (2011), Evaluating modeled carbon state and flux variables against multiple NACP observational datasets, 16th Annual CESM Workshop, Breckenridge, CO, 20 -23 June.
22. **Bisht, G.**, Mills, R. T., Hoffman, F. M., and Thornton, P. E. (2011), Model development towards incorporating 3-D subsurface hydrologic processes with the Community Land Surface Model (CLM): Coupling PFLOTRAN and CLM, Joint Land/BGC/Chemistry Working Group Meeting, Boulder, CO, 15-17 March.
21. Thornton, P. E., **Bisht, G.**, and Ricciuto, D. (2011), Evaluating modeled carbon state and flux variables against multiple NACP observational datasets, Joint Land/BGC/Chemistry Working Group Meeting, Boulder, CO, 15-17 March.

20. **Bisht., G.**, and Kumar, M., (2010), Exploring the Potential of Large Scale Distributed Modeling of Snow Accumulation and Melt on GPUs, IN41A-1353, Fall AGU Meeting, 13-17 Dec.
19. Ashfaq, M., and **Bisht, G.**, (2010), South Asian summer monsoon: Role of Plateau heating revisited, GC51B-0752, Fall AGU Meeting, 13-17 Dec.
18. Thornton, P., **Bisht., G**, Ricciuto, D., and NACP Synthesis, (2010), Evaluating modeled carbon state and flux variables against multiple observational constraints, B51L-01, Fall AGU Meeting, 13-17 Dec.
17. Bras, R. L., **Bisht, G.**, and Wang, J. (2010), Remote Sensing of Land Surface Energy Budget of Radiative and Turbulent Fluxes, Proceedings of the 27th Army Science Conference, Orlando, FL, November 29 - December 2.
16. Bras, R. L., R. G. Knox, **Bisht, G.**, and Wang, J., (2010), Patterns of Rainfall over Forested and Deforested Areas of the Amazon Basin, Eos Trans. AGU, 91(26), Jt. Assem. Suppl., Abstract H33D-01.
15. **Bisht, G.** (2010), Observations to Models: Remotely sensed surface energy budget to the Role of topography in modeling hydrologic processes within WRF, Oak Ridge National Laboratory, Oak Ridge, TN.
14. **Bisht, G.**, and Bras, R. L. (2009), Development and assessment of an algorithm to estimate net radiation from the Moderate Resolution Imaging Spectroradiometer under all sky conditions over the Continental United State, Eos Trans. AGU, 90(52), Fall Meet. Suppl., Abstract U33A-0039.
13. **Bisht, G.** (2009), Observations to Models: Remotely sensed surface energy budget to the Role of topography in modeling hydrologic processes within WRF, Pacific Northwest National Laboratory, Richland, WA.
12. **Bisht, G.** (2009), Algorithm to estimate net radiation using the MODIS data under all sky conditions over the Continental United States, The Environmental Fluid Mechanics/Hydrology Seminar Series, Ralph Parsons Laboratory, Massachusetts Institute of Technology.
11. **Bisht, G.**, Narayan, U., and Bras, R. L., (2008). Prediction of Seasonal to Inter-annual Hydro-climatology including the Effects of Vegetation Dynamics and Topography over Large River Basins, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract H23G-02.
10. Sivandran, G., **Bisht, G.**, Ivanov, V. Y., and Bras, R. L., (2008). An eleven-year validation of a physically-based distributed dynamic ecohydrological model tRIBS+VEGGIE: Walnut Gulch Experimental Watershed, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract H21F-0888.
9. Narayan, U., **Bisht, G.**, Bras, R. L., (2008). Topographic Control on Soil-Vegetation-Atmosphere Interactions and its Impact on Numerical Weather Prediction, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract H21F-0889.
8. Narayan, U., **Bisht, G.**, Bras, R. L., Ivanov, V. Y., and Vivoni, E. (2008), Coupling a Regional Atmosphere Model (WRF) and a High Resolution Distributed Ecohydrology Model (tRIBS) to Study Soil Moisture Variability, Joint Army-Air Force Land Surface Dynamics Working Group Meeting.
7. **Bisht, G.**, Narayan, U., Bras, R., Ivanov, V. Y., and Vivoni, E. R., (2008), Coupling a high-resolution dynamic ecohydrological model (tRIBS-VEGGIE) and Weather Research and Forecasting (WRF) model, WRF User Workshop, 9th Annual Meeting.
6. Chagnon, F., Bras, R., Wang, J., Williams, E., Betts, A., Renno, A., Machado, L., Knox, R., and **Bisht, G.**, (2007). Do Clouds Follow Deforestation Over the Amazon? Eos. Trans. AGU, 88(52), Fall Meeting Suppl., Abstract GC21A-0149.

5. Venturini, V., Islam, S., **Bisht, G.**, and Rodriguez, L., (2006), Estimation of evaporative fraction and evapotranspiration from remotely sensed data using complementary relationship, AMS, 87th Annual Meeting.
4. Mendez-Barroso, L. A., Rinehart, A. J., Aragon, C. A., **Bisht, G.**, Cardenas, M. B., Engle, E., Forman, B., Frisbee, M., Gutierrez-Jurado, H. A., Hong, S., Tai, K., Wyckoff, R. L., and Vivoni, E. R., (2005). Spatial and Temporal Analysis of Hydrometeorological Conditions in the Valles Caldera, New Mexico during the North American Monsoon, *Eos. Trans. AGU*, 86(52), Fall Meeting Suppl., Abstract H11B-1259.
3. Jiang, L., Islam, S., **Bisht, G.**, Venturini, V., Carlson, T. N., Guo, W., and Tarpley, D., (2005). Potential of Satellite-Based Models for Land Surface Evapotranspiration Estimation, *Eos Trans. AGU* 86(18), Jt Assem. Suppl., Abstract H32B-03.
2. Venturini, V., **Bisht, G.**, Islam, S., Jiang, L., (2003). Comparison of Evaporative Fraction estimated from AVHRR and MODIS over South Florida, *Eos. Trans. AGU*, 84(46), Fall Meeting Suppl., Abstract H41B-03.
1. **Bisht, G.**, Venturini, V., Islam, S., Jiang, L., (2003). Estimation of Net Radiation using MODIS-Terra data, *Eos. Trans. AGU*, 84(46), Fall Meeting Suppl., Abstract H21H-03.

Collaborators

Brown, Jed (U. Colorado), Collier, N. (ORNL) Hammond, G. (PNNL), Hao, D. (PNNL), Johnson, J. (Cohere LLC), Knepley, M. (U. Buffalo), Kumar, M. (U. Alabama), Leone, R. (SNL), Li, L. (PNNL) Qiu, H. (PNNL), Riley, W. J. (LBNL), Xu, D. (PNNL).

Membership

American Geophysical Union

Teaching Experience

1. Teaching Assistant, Introduction to Hydrology, Massachusetts Institute of Technology, Fall 2007
2. Teaching Assistant, Fluid Mechanics & Hydraulics Laboratory, University of Cincinnati, Fall 2002, Fall 2003