



### Publications from the Princeton Subsurface Hydrology Research Group (2004-2015):

1. Celia, M.A., S. Bachu, J.M. Nordbotten, and K.W. Bandilla, "[Status of CO<sub>2</sub> Storage in Deep Saline Aquifers with Emphasis on Modeling Approached and Practical Simulations](#)", *Special 50<sup>th</sup> Anniversary Issue of Water Resources Research*, DOI 10.1002/2015WR017609, 2015.
2. Bandilla, K., M.A. Celia, J.T. Birkholzer, A. Cihan, and E.C. Leister, "[Multi-phase Modeling of Geologic Carbon Sequestration in Saline Aquifers](#)", *Ground Water*, 53(3), 362-277, 2015.
3. Edwards, R.E.J., M.A. Celia, K.W. Bandilla, F. Doster, and C.M. Kanno, "[A Model to Estimate Carbon Dioxide Injectivity and Storage Capacity for Geological Sequestration in Shale Gas Wells](#)," *Environmental Science and Technology*, published online July 17, 2015.
4. Huang, X., K.W. Bandilla, and M.A. Celia, "[Multi-physics Pore-network Modeling of Two-phase Shale Matrix Flows](#)", *Transport in Porous Media*, DOI 10.1007/s11242-015-0584-8, published online 6 October 2015.
5. Kang, M., E. Baik, A.R. Miller, K.W. Bandilla, and M.A. Celia, "[Effective Permeabilities of Abandoned Oil and Gas Wells: Analysis of Data from Pennsylvania](#)", *Environmental Science and Technology*, 49, 4757-4764, 2015.
6. Zheng, Z., B. Guo, I. Christov, M. Celia, and H. Stone, "[Flow Regimes for Fluid Injection into a Confined Porous Medium](#)", *Journal of Fluid Mechanics*, 767, 881-909, 2015.
7. Wang, H., Y. Ren, J. Jia, and M.A. Celia, "[A Probabilistic Collocation Eulerian-Lagrangian Localized Adjoint Method on Sparse Grids for Assessing CO<sub>2</sub> Leakage through Wells in Randomly Heterogeneous Porous Media](#)", *Computer Methods in Applied Mechanics and Engineering*, 292, 35-53, 2015.
8. Kang, M., C. Kanno, M. Reid, X. Zhang, D.L. Mauzerall, M.A. Celia, Y. Chen, and T.C. Onstott, "[Direct Measurements of Methane Emissions from Abandoned Oil and Gas Wells in Pennsylvania](#)", *Proceedings of the National Academy of Sciences*, Published online December 8, 2014, doi:10.1073/pnas.1408315111, 2014.
9. Kang, M., J.M. Nordbotten, F. Doster, and M.A. Celia, "[Analytical Solutions for Two-phase Subsurface Flow to a Leaky Fault considering Vertical Flow Effects and Fault Properties](#)", *Water Resources Research*, 50(4), 3536-3552, 2014.
10. Guo, B., K.W. Bandilla, F. Doster, E. Keilegavlen, and M.A. Celia, "[A Vertically-integrated Model with Vertical Dynamics for CO<sub>2</sub> Storage](#)", *Water Resources Research*, 50(8), 6269-6284, 2014.
11. Huang, X., K.W. Bandilla, M.A. Celia, and S. Bachu, "[Basin-scale Modeling of CO<sub>2</sub> Storage using Models of Varying Complexity](#)", *International Journal for Greenhouse Gas Control*, 20, 73-86, 2014.
12. Bandilla, K.W., M.A. Celia, and E. Leister, "[Impact of Model Complexity on CO<sub>2</sub> Plume Modeling at Sleipner](#)", *Energy Procedia*, 63, 3405-3415, 2014.
13. Guo, B., K.W. Bandilla, E. Keilegavlen, F. Doster, and M.A. Celia, "[Application of Vertically-integrated Models with Subscale Vertical Dynamics to Field Sites for CO<sub>2</sub> Sequestration](#)", *Energy Procedia*, 63, 3523-3531, 2014.
14. Zhang, Y., M. Person, J. Rupp, K. Ellett, M.A. Celia, C.W. Gable, B. Bowen, J. Evans, K. Bandilla, P. Mozley, T. Dewers, and T. Elliot, "[Hydrogeologic Controls on Induced Seismicity in Crystalline Basement Rocks Due to Fluid Injection into Basal Reservoirs](#)", *Ground Water*, 51(4), 525-538, 2013.
15. Joekar-Niasar, V., F. Doster, R.T. Armstrong, D. Wildenschild, and M.A. Celia, "[Trapping and Hysteresis in Two-phase Flow in Porous Media: A Pore-network Study](#)", *Water Resources Research*, 49, 4244-4256, doi:10.1002/wrcr.20131, 2013.

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17. Doster, F., J.M. Nordbotten, and M.A. Celia, "[Impact of Capillary Hysteresis and Trapping on Vertically Integrated Models for CO<sub>2</sub> Storage](#)", *Advances in Water Resources*, 62, 465-474, 2013.
18. Elliot, T.R., T.A. Buscheck, and M.A. Celia, "[Active CO<sub>2</sub> Reservoir Management for Sustainable Geothermal Energy Extraction and Reduced Leakage](#)", *Greenhouse Gases: Science and Technology*, 3:50-65, DOI: 10.1002/ghg, 2013.
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