

- Ahlers, C.F. and H.H. Liu, Calibrated Properties Model, MDL-NBS-HS-000003 REV 00, Berkeley Lab Report LBID-2325, 2000.
- Ahlers, C.F., Y.S. Wu, Q. Hu, G. Li, H.H. Liu, J. Liu, L. Pan, Unsaturated Zone Flow Processes and Analysis, MDL-NBS-HS-000012 REV00, Berkeley Lab Report, LBID-2369, 2001.
- Asner G.P., A.R. Townsend, W.J. Riley, J.C. Neff, P.A. Matson, and C.C. Cleveland, Modeling physical and biogeochemical controls of terrestrial ecosystem responses to nitrogen deposition, *Biogeochemical Cycles*, 54, 1-39, Berkeley Lab Report, 2001.
- Astheimer, R., K. Bennett, G.E. Brown Jr., J.Hoy, K.W. Jones, N.C. Sturchio, S.R. Sutton, G.A. Waychunas and N.B. Woodward, Inside rocks, *Geotimes*, 45(11), 20-23, Berkeley Lab Report LBNL-48551, 2000.
- Barhen, J., J.G. Berryman, L. Borcea, J. Dennis, C. de Groot-Hedlin, F. Gilbert, P. Gill, M. Heinkenschloss, L. Johnson, T. McEvilly, J. More, G. Newman, D. Oldenburg, P. Parker, B. Porto, M. Sen, V. Torczon, D. Vasco and N.B. Woodward, Optimization and geophysical inverse problems, Berkeley Lab Report LBNL-46959, 2000.
- Benson, S., Earth Sciences Division Annual Report 1999-2000, Berkeley Lab Report LBNL-47002, 2000.
- Benson, S. and N. Goldstein, Earth Sciences Division Annual Report 2000 - 2001, Berkeley Lab Report LBNL-48899, 2001.
- Berdahl, P., L. Espinoza-Nava, D. Littlejohn, D. Lucas, and D.L. Perry, Near-Infrared Turbidity of  $\beta$ -FeOOH Particle Suspensions, *Appl. Spectros.*, 54(262), 262-267, Berkeley Lab Report LBNL-43582, 2000.
- Birkholzer, J.T. and Y.W. Tsang, Modeling the thermal-hydrologic processes in a large-scale underground heater test in partially saturated fractured tuff, *Water Resources Research*, 36(6), 1431-1448, Berkeley Lab Report LBNL-43596, 2000.
- Bodvarsson, G, H.-H. Liu, C.F Ahlers, Y-S. Wu and E. Sonnenthal, Parameterization and Upscaling in Modeling Flow and Transport in the Unsaturated Zone of Yucca Mountain, Chapter 11 of Conceptual Models of Flow and Transport in the Fractured Vadose Zone, National Research Council, National Academy Press, Washington, 335-365, Berkeley Lab Report LBNL-43467, 2001.
- Bodvarsson, G, S. Finsterle, H.-H. Liu, C. M. Oldenburg, K. Pruess, E. Sonnenthal and Y-S. Wu, Flow and transport modeling of subsurface systems, Chapter 5 of Vadose Zone Science and Technology Solutions, B. B. Looney and R. Falta, eds., Battelle Press, Columbus, OH, 591-827, Berkeley Lab Report LBNL-46025, 2000.
- Bodvarsson, G.S., C.F. Ahlers, M. Cushey, F.H. Dove, S.A. Finsterle, C.B. Haukwa, J. Hinds, C.K. Ho, J. Houseworth, Q. Hu, H.H. Liu, M. Pendleton, E.L. Sonnenthal, A.J. Unger, J.S.Y. Wang, M. Wilson and Y.-S. Wu, Unsaturated Zone Flow and Transport Model Process Model Report, TDR-NBS-HS-000002 REV 00, Berkeley Lab Report LBID-2337, 2000.

- Börgesson, L., M. Chijimatsu, T. Fujita, T.S. Nguyen, J. Rutqvist and L. Jing, Thermo-hydro-mechanical characterization of a bentonite based buffer material by laboratory tests and numerical back analyses, *International Journal of Rock Mechanics and Mining Sciences*, 38, 105-127, Berkeley Lab Report LBNL-46132, 2001.
- Borglin, S. E., C. M. Oldenburg and G. J. Moridis, Experimental Investigation of Flow of Ferrofluids in Porous Media, *Transport in Porous Media*, 41, 61-80, Berkeley Lab Report LBNL-40126, 2000.
- Byrne, R., B. L. Ingram, S. Starratt, F. Malamud-Roam, J.N. Collins and M.E. Conrad, Carbon-isotope, diatom, and pollen evidence for late holocene salinity change in a brackish marsh in the San Francisco estuary, *Quaternary Research*, 55(1), 66-76, Berkeley Lab Report LBNL-48560, 2001.
- Chen, J., S. Hubbard and Y. Rubin, Estimating the hydraulic conductivity at the South Oyster site from geophysical tomographic data using Bayesian techniques based on the normal linear regression model, *Water Resources Research*, 37(6), 1603-1613, Berkeley Lab Report LBNL-47682, 2001.
- Conrad, M. S. and B. Faybishenko, Isotopic tracers of flow and transport through the vadose zone, *Vadose Zone Technology and Science Solutions*, B. B. Looney and R. Falta, eds., Batelle Press, Columbus, OH, 298-303, Berkeley Lab Report 2000.
- Cook, D.R., Y.P. Liaw, D.L. Sisterson and N.L. Miller, Production of nitrogen oxides by a large spark generator, *Journal of Geophysical Research-Atmospheres*, 105(D6), 7103-7110, Berkeley Lab Report LBNL-46485, 2000.
- Daley, T.M. and D. Cox, Orbital vibrator seismic source for simultaneous P- and S-wave crosswell acquisition, *Geophysics*, 66, 1471-1480, Berkeley Lab Report LBNL-43070, 2000.
- Daley, T.M. and R. Gritto, Field test of INEEL tube-wave suppressor and LBNL borehole seismic system at Richmond Field Station, February 2001, Berkeley Lab Report LBNL-49015, 2001.
- Daley, T.M., E.L. Majer, J. E. Peterson and P. Roberts, Field monitoring of seismic stimulation sites, Berkeley Lab Report LBNL-44536, 2001.
- Daley, T.M., E.L. Majer and J.E. Peterson, Crosswell seismic imaging in a contaminated basalt aquifer - Final report, Berkeley Lab Report LBNL-45533, 2001.
- Daley, T.M., E.L. Majer and R. Gritto, Single well seismic imaging: Status report, Berkeley Lab Report LBNL-45342, 2000.
- Daley, T.M., M.A. Feighner and E.L. Majer, Monitoring underground gas storage in a fractured reservoir using time lapse vsp, Berkeley Lab Report LBNL-44876, 2000.
- Daley, T.M., Calibration test of DAS-2 Borehole ADC, Berkeley Lab Report LBNL-45268, 2000.
- Datta-Gupta, A. and D.W. Vasco, Production tomography merges geophysics with reservoir engineering, *Oil and Gas Journal*, 99(23), 75-81, Berkeley Lab Report LBNL-48522, 2001.

- Datta-Gupta, A., K. Nordaas, S. Yoon and D.W. Vasco, Streamlines, Ray tracing, and production tomography: Generalization to compressible flow, *Petroleum Geoscience*, 7, S75-S86, Berkeley Lab Report 2001.
- De Flaun, M., D. Balkwill, J. Chen, F. Dobbs, H. Dong, J. Fredrickson, M. Fuller, M. Green, T. Ginn, T. Griffin, W. Holben, S. Hubbard, W. Johnson, P. Long, B. Mailloux, E. Majer, M. McInerney and C. Murray, Breakthroughs in Field-Scale Bacterial Transport, *EOS*, 82(38), 417-425, Berkeley Lab Report LBNL-48440, 2001.
- Doughty, C. and B. Faybishenko, Modeling of water flow and tracer breakthrough curves in fractured basalt (lessons learned and future investigations), Vadose Zone Science and Technology Solutions, B. B. Looney and R. W. Falta, eds., Battelle Press, OH, Berkeley Lab Report LBNL-46158, 2000.
- Doughty, C., Numerical model of water flow in a fractured basalt vadose zone, *Water Resources Research*, 36(12), 3521-3534, Berkeley Lab Report 2000.
- Doughty, C., R. Salve, and J.S.Y. Wang, Liquid flow in unsaturated fractured welded tuffs: II. Numerical Modeling, *Journal of Hydrology*, 256, 80-105, Berkeley Lab Report LBNL-47530, 2001.
- Doughty, C. and C.-F. Tsang, BORE-II-A code to compute dynamic wellbore electrical conductivity logs with multiple inflow/outflow points including the effects of horizontal flow across the well, Berkeley Lab Report LBNL-46833, 2000.
- Dybowski, C., S. P. Gabuda, S. G. Kozlova, G. Neue, D.L. Perry, and V. V. Terskikh, Correlation and Relativistic Effects in  $\beta$ -PbO and Other Lead (II) Oxides: A Quantum Ab Initio Explanation of the  $^{207}\text{Pb}$  NMR and XANES Spectra, *J. Sol. State Chem.*, 157(220), Berkeley Lab Report 2001.
- Eaton, D., D. Janecky, D. Woodward, J. Imrich, J. Evans, M. Morris, P. Reimus and T. Hazen, SCFA lead lab technical assistance review of the Pit 7 Complex source containment, Berkeley Lab Report LBNL-47546, 2001.
- Elmroth, E., C. Ding and Y-S. Wu, High Performance Computations for Large Scale Simulations of Subsurface Multiphase Fluid and Heat Flow Simulation, *Journal of Supercomputing*, 18(3), 235-258, Berkeley Lab Report LBNL-44693, 2001.
- Eng, P.J., T.P. Trainor, G.E. Brown Jr, G.A. Waychunas, M. Newville, S.R. Sutton and M.L. Rivers, Structure of the hydrated  $\alpha\text{-Al}_2\text{O}_3$  (0001) surface, *Science*, 288(5468), 1029-1033, Berkeley Lab Report LBNL-46490, 2000.
- Evans, B., M. L. Sorey, B. M. Kennedy, D.A. Stonestram, D.L. Rogie and D.L. Shuster, High  $\text{CO}_2$  emissions through porous media: transport mechanisms and implications for flux measurements and fractionation, *Chemical Geology*, 177, 15-29, Berkeley Lab Report 2001.
- Faybishenko, B., A.J. Babchin, A.L. Frenkel, D. Halpern and G.I. Sivashinsky, A Model of Chaotic Time Evolution of an Ultrathin Liquid Film Flowing Down an Inclined Plane, *Colloids and Surfaces A-Physicochemical and Engineering Aspects*, 192(1-3), 377-385, Berkeley Lab Report LBNL-42884, 2001.

- Faybishenko, B., C. Doughty, M. Steiger, J. C. S. Long, T. R. Wood, J. S. Jacobsen, J. Lore and P. T. Zawislanski, Conceptual Model of the Geometry and Physics of water Flow in a Fractured Basalt Vadose Zone, Water Resources Research, 36(12), 3499-3520, Berkeley Lab Report LBNL-42925, 2000.
- Faybishenko, B., M. Bandurraga, M. Conrad, P. Cook, C. Eddy-Dilek, L. Everett, T. Hazen, S. Hubbard, A.R. Hutter, P. Jordan, C. Keller, F.J. Leij, N. Loaiciga, E.L. Majer, L. Murdoch, S. Renahan, B. Riha, J. Rossabi, Y. Rubin, A. Simmons, S. Weeks and C.V. Williams, Vadose Zone Characterization and Monitoring: Current Technologies, Applications, and Future Developments, Chapter 3 of Vadose Zone Science and Technology Solutions, B. B. Looney and R. Falta, eds., Batelle Press, OH, 133-396, Berkeley Lab Report LBNL-46159, 2000.
- Faybishenko, B., P.A. Witherspoon and S. Benson, Dynamics of Fluids in Fractured Rock, Geophysical Monograph, 122, Berkeley Lab Report 2000.
- Faybishenko, B., P.A. Witherspoon, C. Doughty, J.T. Geller and R.R. Podgorney, Multi-scale investigations of liquid flow in a fractured basalt vadose zone, Flow and Transport through Unsaturated Fractured Rock, 2nd, 42, D.D. Evans, T.J. Nicholson and T.C. Rasmussen, eds., Geophysical Monograph, Washington D.C., 161-182, Berkeley Lab Report LBNL-42910, 2001.
- Faybishenko, B., Tensiometer for Shallow or Deep Measurements Including Vadose Zone and Aquifers, Journal of Soil Sciences, 165(6), 473-482, Berkeley Lab Report LBNL-43333, 2000.
- Faybishenko, B., Chaotic dynamics in flow through unsaturated fractured media, Berkeley Lab Report LBNL-46958, 2000.
- Fensterle, S. and R.C. Trautz, Numerical Modeling of Seepage into Underground Openings, Mining Engineering, 53(9), 52-56, Berkeley Lab Report LBNL-44060, 2001.
- Fensterle, S. and R.C. Trautz, Seepage Calibration Model and Seepage Testing Data, MDL-NBS-HS-000004 REV 00, Berkeley Lab Report LBID-2333, 2000.
- Fensterle, S., C.F. Ahlers, and R.C. Trautz, Seepage Calibration Model and Seepage Testing Data, MDL-NBS-HS-000004 REV01, Berkeley Lab Report, LBID-2370, 2000.
- Fensterle, S., C.F. Ahlers, G. Li, C-F. Tsang, Y. Tsang, E.L. Sonnenthal, J. Rutqvist, and G.S. Bodvarsson, Seepage, Chapter 4 of Supplemental Science and Performance Analyses, TDR-MGR-MD-000007, REV00. Berkeley Lab Report, LBID-2365, 2001.
- Fensterle, S., C.F. Ahlers, P.J. Cook and Y. Tsang, Seepage into drifts located in a lithophysal zone, Berkeley Lab Report LBNL-47947, 2001.
- Fensterle, S., Demonstration of optimization techniques for ground water plume, Berkeley Lab Report LBNL-46746, 2000.

- Finsterle, S., G. Bjornsson, K. Pruess and A. Battistelli, Evaluation of Geothermal Well Behavior Using Inverse Modeling, Dynamics of Fluids in Fractured Rocks, B. Faybishenko, P.A. Witherspoon and S. Benson, eds., Geophysical Monograph 122, Washington D.C., 377-387, Berkeley Lab Report LBNL-43331, 2000.
- Finsterle, S., Using the continuum approach to model unsaturated flow in fractured rock, *Water Resources Research*, 36(8), 2058-2066, Berkeley Lab Report LBNL-45459, 2000.
- Flint, A.L., L.E. Flint, G.S. Bodvarsson, E.M. Kwicklis, and J. Fabryka-Martin, Development of the Conceptual Model of Unsaturated Zone Hydrology at Yucca Mountain, Nevada, Chapter 2 of Conceptual Models of Flow and Transport in the Fractured Vadose Zone, National Academy of Sciences Press, Washington, 47-85, Berkeley Lab Report LBNL-46570, 2001.
- Flint, A.L., L.E. Flint, G.S. Bodvarsson, E.M. Kwicklis and J. Fabryka-Martin, Evolution of the Conceptual Model of Unsaturated Zone Hydrology at Yucca Mountain, Nevada, *Journal of Hydrology*, 247, 1-30, Berkeley Lab Report LBNL-46568, 2001.
- Flint, A.L., L.E. Flint, G.S. Bodvarsson; E.M. Kwicklis, and J.M. Fabryka-Martin, The Hydrology of Yucca Mountain, *Reviews of Geophysics*, 39(4), 447-470, Berkeley Lab Report LBNL-46570, 2001.
- Freifeld, B. and C. M. Oldenburg, The restricted interval Guelph permeameter: theory and application, *Water Resources Research*, 36(6), 1373-1380, Berkeley Lab Report 2000.
- Fung, I. Y., S. K. Meyn, I. Tegen, S. C. Doney, J. G. John and J. K. B. Bishop, Iron supply and demand in the upper ocean, *Global Biogeochemical Cycles*, 14(1), 281-295, Berkeley Lab Report 2000.
- Gadelle, F., J. Wan and T.K. Tokunaga, Removal of Uranium (VI) from contaminated sediments by surfactants, *Journal of Environmental Quality*, 30(2), 470-478, Berkeley Lab Report LBNL-43146, 2001.
- Garcia, J. and K. Pruess, Local grid refinement for multi-scale geothermal reservoir simulation with TOUGH2, Berkeley Lab Report LBNL-45646, 2000.
- Garcia, J.E., Density of aqueous solutions of CO<sub>2</sub>, Berkeley Lab Report LBNL-49023, 2001.
- Geller, J. T., H.-Y. N. Holman, G. Su, M. S. Conrad, K. Pruess and J. C. Hunter-Cevera, Flow dynamics and potential for biodegradation of organic contaminants in fractured rock vadose zones, *J. Contaminant Hydrology*, 43(1), 63-90, Berkeley Lab Report LBNL-42587, 2000.
- Geller, J., S. Borglin and B. Faybishenko, Experiments and evaluation of chaotic behavior of dripping water in fracture models, Berkeley Lab Report LBNL-48394, 2001.
- Geller, J.T., M.B. Kowalsky, P.K. Seifert, and K.T. Nihei, Acoustic detection of immiscible liquids in sands, *Geophys. Res. Lett.*, 27(3), 417-420, Berkeley Lab Report LBNL-42791, 2000.
- Geller, J., Lawrence Berkeley National Lab and Geologic Nuclear Waste Disposal Underground Testing and Modeling of Flow and Transport, Berkeley Lab Report PUB-838, 2000.

- Ghezzeheri, T.A. and D. Or, Dynamics of Soil Aggregate Coalescence Governed by Capillary and Tillage Processes, Water Resources Research, 36(2), 367-379, Berkeley Lab Report 2000.
- Ghezzeheri, T.A. and D. Or, Rheological Properties of Wet Soil and Clays under Steady and Oscillatory Stresses, Soil Science Society of America Journal, 65(3), 624-637, Berkeley Lab Report 2001.
- Greathouse, J.A., K. Refson and G. Sposito, Molecular dynamics simulation of water mobility in magnesium-smectite hydrates, Journal of the Chemical Society, 122(46), Berkeley Lab Report LBNL-47391, 2000.
- Gritto, R., T.M. Daley and E.L. Majer, Seismic mapping of the subsurface structure at the Ryepatch Geothermal Reservoir, Berkeley Lab Report LBNL-47032, 2000.
- Guay, C.K.H. and J.K.B. Bishop, A rapid birefringence method for measuring suspended  $\text{CaCO}_3$  concentrations in seawater, Deep-Sea Research, Part I, Berkeley Lab Report LBNL-46895, 2001.
- Guay, C.K.H., K.K. Falkner, R.D. Muench, M. Mensch, M. Frank and R. Bayer, Wind-driven transport pathways for Eurasian Arctic river discharge, Journal of Geophysical Research: C-Oceans, Berkeley Lab Report LBNL-45451, 2001.
- Halliday, A.N., J.N. Christensen, D.-C. Lee, C.M. Hall, X. Luo and M. Rehkamper, Multiple-collector inductively coupled plasma mass spectrometry, Inorganic Mass Spectrometry, Christopher M. Barshick, Douglas C. Duckworth and David H. Smith, eds., Marcel Dekker, Inc., Berkeley Lab Report LBNL-46480, 2000.
- Haukwa, C., Mountain-Scale Coupled Processes (TH) Models, MDL-NBS-HS-000007 REV00, Berkeley Lab Report LBID-2334, 2000.
- Hazen, T. C., A. J. Tien, A. Worsztynowicz, D. J. Altman, K. Ulfig, T. Manko and M. Kuperberg, Bioremediation of a Polish Petroleum Refinery, Final DOE Report for EM50 published by Florida State University, Berkeley Lab Report 2000.
- Hazen, T., SCFA lead lab technical assistance review of SLAC ground water plumes, Berkeley Lab Report LBNL-47831, 2001.
- Hazen, T.C., A.J. Tien, A. Worsztynowicz, D.J. Altman, K. Ulfig and T. Manko, Biopiles for remediation of petroleum-contaminated soils: a Polish case study, Berkeley Lab Report LBNL-46445, 2000.
- Hazen, T.C., Bioremediation Education Science and Technology (BEST) Program Annual Report 1999, Berkeley Lab Report LBNL/PUB-839, 2000.
- Hazen, T.C., J. Montanez, L. Mendez, and S. Chauhan, Polynuclear aromatic hydrocarbons in situ bioremediation treatability test: Focus on contaminant disappearances by HPLC analysis, Berkeley Lab Report LBNL-47003, 2000.
- Hinds, J. and L. Pan, Development of Numerical Grids for UZ Flow and Transport Modeling, ANL-NBS-HS-000015 REV00, Berkeley Lab Report LBID-2322, 2000.



- Hinds, J.J. and G.S. Bodvarsson, Fractures and UZ processes at Yucca Mountain, Berkeley Lab Report LBNL-47991, 2001.
- Holman, H.-Y. N., M.C. Martin, E.A. Blakely, K. Bjornstad and W.R. McKinney, Infrared spectroscopic characteristics of cell cycle and cell death probed by synchrotron-based FTIR spectromicroscopy, *Biopolymers*, 57(6), 329-335, Berkeley Lab Report LBNL-45698, 2000.
- Holman, H.-Y. N., R. Goth-Goldstein, E.A. Blakely, K. Bjornstad, M.C. Martin and W.R. McKinney, Individual Human Cell Responses to Low Doses of Chemicals Studied by Synchrotron Infrared Spectromicroscopy, Biomedical Spectroscopy: Vibrational Spectroscopy and Other Novel Techniques SPIE, 3918, Berkeley Lab Report 2000.
- Holman, H.-Y. N., In vitro gastrointestinal mimetic protocol for measuring bioavailable contaminants, Official Gazette of the United States Patent and Trademark Office Patents, 1232(3), Berkeley Lab Report 2000.
- Holman, H.-Y.N., M.C. Martin, E.A. Blakely, K. Bjornstad and W.R. McKinney, IR spectroscopic characteristics of cell cycle and cell death probed by synchrotron radiation based Fourier transform IR spectromicroscopy, *Biopolymers*, 57(6), 329-335, Berkeley Lab Report LBNL-45698, 2000.
- Holman, H.-Y.N., R. Goth-Goldstein, M.C. Martin, M.L. Russell and W.R. McKinney, Low-dose responses to 2,3,7,8-tetrachlorodibenzo-p-dioxin in single living human cells measured by synchrotron infrared spectromicroscopy, *Environmental Science & Technology*, 34(12), 2513-2517, Berkeley Lab Report LBNL-43783, 2000.
- Houseworth, J. E., Features, Events and Processes in Unsaturated Zone Flow and Transport, ANL-NBS-MD-000001 REV00, Berkeley Lab Report LBID-2346, 2000.
- Hoversten, G. M., S.C. Constable and H. Morrison, Marine Magnetotellurics for Base Salt Mapping: Gulf of Mexico Field Test at the Gemini Structure, *Geophysics*, 65, 1476-1488, Berkeley Lab Report LBNL-44329, 2000.
- Hoversten, G.M., G.A. Newman, H.F. Morrison, E. Gasperikova and J.-I. Berg, Reservoir characterization using crosswell EM inversion: A feasibility study for the Snorre Field, North Sea, *Geophysics*, 66(4), 1177-1189, Berkeley Lab Report LBNL-46469, 2000.
- Hoversten, M.G., R. Gritto, B. Kirkendall, Crosswell Seismic and Electromagnetic Monitoring of CO2 Injection, SEG Development and Production Forum, Berkeley Lab Report LBNL-48703, 2001.
- Hu, Q. and J.S.Y. Wang, Chemical analysis of water samples collected during cross drift bulkhead entries, Berkeley Lab Report LBNL-49178, 2001.
- Hu, .Q., R. Salve, W.T. Stringfellow and J.S.Y. Wang, Field tracer transport tests in unsaturated fractured tuff, *Journal of Contaminant Hydrology*, 51(1-2), 1-12, Berkeley Lab Report LBNL-47004, 2001.
- Hu, Q., P. Persoff and J.S.Y. Wang, Laboratory measurement of water imbibition into low-permeability welded tuff, *Journal of Hydrology*, 242(1-2), 64-78, Berkeley Lab Report LBNL-43594, 2001.

- Hu, Q., T. Kneafsey and J. Wang, Summary report on Phase 1 feasibility study of in-drift diffusion, Berkeley Lab Report LBNL-49063, 2001.
- Hubbard, S. and Y. Rubin, A Review of Selected Estimation Techniques using Geophysical Data, *Journal of Contaminant Hydrology*, 45, 3-34, Berkeley Lab Report 2000.
- Hubbard, S.S. and Y. Rubin, Hydrogeological parameter estimation using geophysical data: A review of selected techniques, *Journal of Contaminant Hydrology*, 45(1-2), Berkeley Lab Report LBNL-44744, 2000.
- Hubbard, S., J. Chen, J. Peterson, E. Majer, K.H. Williams, D.J.P. Swift, B. Maillonx and Y. Rubin, Hydrogeological characterization of the South Oyster bacterial transport site using geophysical data, *Water Resources Research*, 37(10), 2431-2456, Berkeley Lab Report LBNL-46224, 2001.
- Hudson, J.A., O. Stephansson, J. Andersson, C-F. Tsang and L. Jing, Coupled T-H-M issues relating to radioactive waste repository design and performance, *International Journal of Rock Mechanics and Mining Sciences*, 38(1), 143-161, Berkeley Lab Report LBNL-48687, 2001.
- Johnson, L.R. and C.G. Sammis, Effects of rock damage on seismic waves generated by explosions, *Pure and Applied Geophysics*, 158, 1869-1908, Berkeley Lab Report LBNL-48368, 2001.
- Johnson, T.M., T.D. Bullen and P.T. Zawislanski, Selenium stable isotopes ratios as indicators of sources and cycling of selenium: results from the northern reach of San Francisco Bay, *Environmental Science and Technology*, 34(11), 2075-2079, Berkeley Lab Report LBNL-46494, 2000.
- Johnson, W.P., P. Zhang, M.E. Fuller, T.D. Scheibe, B.J. Mailloux, T.C. Onstott, M.F. DeFlaun, S.S. Hubbard, J. Radtke, W.P. Kovacic and W. Holben, Ferrographic tracking of bacterial transport in the field at the narrow channel focus area, Oyster, Va, *Environmental Science Technology*, 35(1), 182-191, Berkeley Lab Report LBNL-46472, 2000.
- Juncosa Rivera, R., T. Xu and K. Pruess, A comparison of results obtained with two subsurface non-isothermal multiphase reactive transport simulators, FADES-CORE and TOUGHREACT, Berkeley Lab Report LBNL-47315, 2001.
- Karasaki, K., B. Freifeld, A. Cohen, K. Grossenbacher, P. Cook and D.W. Vasco, A multidisciplinary fractured rock characterization study at Raymond field site, Raymond, CA, *Journal of Hydrology*, 236(1-2), 17-34, Berkeley Lab Report LBNL-46461, 2000.
- Keers, H., D.W. Vasco and L.R. Johnson, Viscoacoustic crosswell imaging using asymptotic waveforms, *Geophysics*, 66(3), 861-870, Berkeley Lab Report LBNL-46463, 2000.
- Keers, H., L.R. Johnson and D.W. Vasco, Acoustic crosswell imaging using asymptotic waveforms, *Geophysics*, 65(5), 1569-1582, Berkeley Lab Report LBNL-44478, 2000.
- Kim, J. and M.Y. Corapcioglu, Sharp-interface modeling of LNAPL sources migrating on the water table, *Environmental Engineering Science*, 18(6), 359-367, Berkeley Lab Report 2001.



- Kim, J. and R.W. Walters, Oxygen transfer at low drop weirs, *Journal of Environmental Engineering*, 127(7), 604-610, Berkeley Lab Report 2001.
- Kim, J. and R.W. Walters, The importance of tailwater depth in predicting and maximizing oxygen transfer and low-drop weirs, *Journal of Environmental Engineering*, 127(7), 604-610, Berkeley Lab Report 2001.
- Kim, J., A nested modeling study of elevation-dependent climate change signals in California induced by increased atmospheric CO<sub>2</sub>, *Geophysical Research Letters*, 28(15), 2951-2954, Berkeley Lab Report LBNL-48081, 2001.
- Kim, J., N.L. Miller, J.D. Farrara and S.-Y. Hong, A Seasonal Precipitation and Stream Flow Hindcast and Prediction Study in the Western United States during the 1997/1998 Winter Season Using a Dynamic Downscaling System, *Journal of Hydrometeorology*, 1(4), 311-329, Berkeley Lab Report LBNL-44063, 2000.
- Kneafsey, T.J., C.M. Oldenburg and R. Salve, The effect of clay swelling on fracture flow in the paintbrush nonwelded unit of the Topopah spring tuff, Berkeley Lab Report LBNL-48125, 2001.
- Korneev, V.A. and L. Johnson, Fluctuations of elastic waves due to random scattering from inclusions, *Journal of Acoustical Society of America*, 9, 973-991, Berkeley Lab Report LBNL-48534, 2001.
- Korneev, V.A. and L. R. Myer, Testing of sedimentary-layer continuity using guided waves, Berkeley Lab Report LBNL-48925, 2001.
- Kyriakidis, P.C., J. Kim and N.L. Miller, Geostatistical mapping of precipitation using atmospheric and terrain characteristics, *Journal of Applied Meteorology*, 40(11), 1855-1877, Berkeley Lab Report LBNL-47117, 2001.
- Kyriakidis, P.C., N.L. Miller and J. Kim, Uncertainty propagation of regional climate model precipitation forecasts to hydrologic impact assessment, *Journal of Hydrometeorology*, 2(2), 140-160, Berkeley Lab Report LBNL-45852, 2000.
- Kyriakidis, P., J. Kim, and N.L. Miller, Generation of synthetic daily precipitation records for hydroclimate impact assessment, *J. Climate*, 40(11), 1855-1877, Berkeley Lab Report LBNL-47117, 2000.
- Lapenis, A.G., M.S. Torn, J.W. Harden, K. Hollocker, B.V. Babikov, A.I. Timofeev, M.I. Hornberger, R. Nattis, Scientists Unearth Clues to Soil Contamination by Comparing Old and New Soil Samples, *EOS*, 81(7), 55-57, Berkeley Lab Report 2000.
- Laverov, N.P., V.I. Velichkin, A.A. Pek and V.D. Akunov, The geological disposal of high-level nuclear waste: conceptual approach and related problems, Berkeley Lab Report LBNL-45282, 2000.
- Lee, K.H., Geophysics with applications to subsurface waste disposal: Case history, Seoul, Korea, 2001, Berkeley Lab Report LBNL-48776, 2001.

- Lee, K.H., H.J. Kim and T. Uchida, Electromagnetic fields in steel-cased borehole, Geophysical Prospecting, Berkeley Lab Report LBNL-47641, 2001.
- Li, L., I. Yolcubal, S. Snyder, Q. Hu and M.L. Brusseau, Biodegradation during contaminant transport in porous media - Apparent condition-dependency of growth-related coefficients, Journal of Contaminant Hydrology, 50(3-4), 209-223, Berkeley Lab Report 2001.
- Liu, H.H, C.F. Ahlers, and Y-S. Wu, Conceptual and Numerical Models for UZ Flow and Transport, MDL-NBS-HS-000005 REV00, Berkeley Lab Report LBID-2324, 2000.
- Liu, H.H. and G.S. Bodvarsson, Constitutive relations for unsaturated flow in a fracture network, Journal of Hydrology, 252, 116-125, Berkeley Lab Report LBNL-46393, 2001.
- Liu, H.H., C.F. Ahlers and M.A. Cushey, Analysis of Hydrologic Properties Data, ANL-NBS-HS-000002 REV 00, Berkeley Lab Report LBID-2339, 2000.
- Liu, H.H., Conceptual and Numerical Models for UZ Flow and Transport, MDL-NBS-HS-000005 REV 00. Berkeley Lab Report LBID-2324, 2000.
- Liu, H.-H., G.S. Bodvarsson and L. Pan, Determination of particle transfer in random walk particle methods for fractured porous media, Water Resources Research, 36(3), 707-713, Berkeley Lab Report LBNL-43358, 2000.
- Lu, G., C. Zheng, R.J. Donahoe, and W.B. Lyons, Controlling processes in a  $\text{CaCO}_3$  precipitating stream in Huanglong Scenic District, China, Journal of Hydrology, 230, 34-54, Berkeley Lab Report 2000.
- Majer, E., K.H. Williams, J. Peterson and T. Daley, High Resolution Imaging of Vadose Zone Transport using Crosswell Methods, Berkeley Lab Report LBNL-49022, 2001.
- Majer, E., R. Gritto and T. Daley, Single-Well Seismic Imaging, Berkeley Lab Report LBNL-47002, 2000.
- Majer, E., R. Gritto, T. Daley, A. Kirkpatrick and J. Peterson, Three-Dimensional Imaging of Geothermal Reservoirs using Active and Passive Methods, Berkeley Lab Report LBNL-47002, 2000.
- Majer, E., T. Daley, L. R. Myer, K. Nihei, J. Queen and J. Sintor, San Juan Fracture Characterization Project: Status and Current Results, Berkeley Lab Report LBNL-48908, 2001.
- Majer, E., T. Daley, R. Gritto, L. Myer, S. Nakagawa and K. T. Nihei, Fracture Quantification in Gas Reservoirs, Berkeley Lab Report LBNL-47002, 2000.
- Majer, E.L., K.H. Williams, J.E. Peterson and T. Daley, High resolution imaging of vadose zone transport using crosswell radar and seismic methods, Berkeley Lab Report LBNL-47465, 2000.
- Majer, E.L., T.M. Daley, L.R. Myer, K. Nihei, J. Queen, J. Sinton, J. Murphy, M. Fortuna, H.B. Lynn, M.A. Imhoff and R. Wilson, San Juan Fracture Characterization Project: Status and current results, Berkeley Lab Report LBNL-48908, 2001.

- Mays, D. and B. Faybishenko, Washboards in unpaved highways as a complex dynamic system, *Journal of Complexity*, 5(6), 51-60, Berkeley Lab Report LBNL-45838, 2000.
- Miller, N. L., NASA/RESAC Annual Report: California Water Resources Research and Application Center, Berkeley Lab Report LBNL-47646, 2001.
- Miller, N.L., J. Kim, J.Y. Zhang, J.H. Oh, Coupled precipitation-streamflow simulations at the GAME/HUBEX site: Xixian basin, *J. Meteor. Soc. Japan*, 79, 985-998. Berkeley Lab Report 2001.
- Miller, N., K.E. Bashford and E. Strem, Climate change sensitivity study of California hydrology: A report to the California Energy Commission, Berkeley Lab Report LBNL-49110, 2001.
- Miller, N., Preparing for a climate change: The potential consequences of climate variability and change: Southwest, University Arizona Press, Berkeley Lab Report LBNL-47256, 2000.
- Miller, N.L. (Contributing Author), Climate change impacts on the United States, The potential consequences of climate variability and change: Overview, National Assessment Synthesis Team, Cambridge University Press, 154 pp., Berkeley Lab Report LBNL-47528, 2000.
- Miller, N.L. (Contributing Author), IPCC TAR Chap. 10. Regional Climate Simulation – Evaluation and Projections, 79pp., Berkeley Lab Report LBNL-46486, 2001.
- Miller, N.L., RESAC Annual Progress Report 2001, Berkeley Lab Report LBNL-47753, 2001.
- Miller, N.L. and J. Kim, Climate change sensitivity analysis for two California watersheds: Addendum to downscaled climate and streamflow study of the Southwestern United States, *Journal of The American Water Resources Association*, 36(3), Berkeley Lab Report LBNL-45877, 2000.
- Miller, N.L., W.J. Gutowski Jr., J. Kim and E. Strem, Assessing California streamflow for present day and 2040 to 2049 climate scenarios, *Journal of Hydrometeorology*, 36(3), 657-661, Berkeley Lab Report LBNL-47987, 2001.
- Moore, J. N., D. I. Norman and B. M. Kennedy, Fluid inclusion gas compositions from an active magmatic-hydrothermal system: a case study of The Geysers geothermal field, USA, *Chemical Geology*, 173(1-3 SI), 3-30, Berkeley Lab Report 2001.
- Moreno, L. and C-F. Tsang, Flow channeling and analysis of tracer tests in heterogeneous porous media, *Water Resources Research*, Berkeley Lab Report LBNL-49153, 2001.
- Moridis, G. and Q. Hu, Radionuclide Transport Models Under Ambient Conditions, MDL-NBS-HS-000008 REV 00, Berkeley Lab Report LBID-2331, 2000.
- Moridis, G.J., Q. Hu, Y.-S. Wu and G.S. Bodvarsson, Modeling studies of radionuclide transport in the unsaturated zone of Yucca Mountain, Nevada, Berkeley Lab Report LBNL-45870, 2000.
- Mukhopadhyay, S. and M. Sahimi, Calculation of the effective permeabilities of field-scale porous media, *Chemical Engineering Science*, 55(20), 4495-4513, Berkeley Lab Report LBNL-46575, 2000.

- Myer, L.R., Fractures as collections of cracks, *International Journal of Rock Mechanics and Mining Science*, 37(1-2), Berkeley Lab Report LBNL-44807, 2000.
- Nakagawa, S., K.T. Nihei and L.R. Myer, Shear induced conversions of seismic waves across single fractures, *International Journal of Rock Mechanics and Mining Sciences*, 37(1-2), Berkeley Lab Report LBNL-44806, 2000.
- Nakagawa, S., K.T. Nihei and L.R. Myer, Stop-pass behavior of acoustic waves in a 1-D fractured system, *Journal of the Acoustical Society of America*, 107(1), Berkeley Lab Report LBNL-44697, 2000.
- Nakagawa, S., K.T. Nihei and L.R. Myer, Wave propagation along a sheared fracture, *JGR- Solid Earth*, Berkeley Lab Report LBNL-44839, 2000.
- Nakao, S., J. Najita and K. Karasaki, Hydraulic well testing inversion for modeling fluid flow in fractured rocks using simulated annealing: A case study at Raymond field site, California, *Journal of Applied Geophysics*, 45(3), 203-223, Berkeley Lab Report LBNL-48530, 2000.
- Newman, G.A. and G. M. Hoversten, Solution strategies for two and three dimensional electromagnetic inverse problems, *Inverse Problems*, 16(5), 1357-1375, Berkeley Lab Report LBNL-46478, 2000.
- Newman, G.A., G. M. Hoversten and D.L. Alumbaugh, Three dimensional magnetotelluric modeling and inversion: Application to sub-salt imaging, *Three-Dimensional Electromagnetics*, 2, Elsevier Science Pub. Co., Berkeley Lab Report LBNL-48528, 2001.
- Nguyen, T.S., L. Borgesson, M. Chijimatsu, J. Rutqvist, T. Fujita, J. Hernelind, A. Kobayashi, Y. Ohnishi, M. Tanaka and L. Jing, Hydro-mechanical response of a fractured rock mass to excavation of a test pit--the Kamishi mine experiment in Japan, *International Journal of Rock Mechanics and Mining Sciences*, 38, 79-94, Berkeley Lab Report LBNL-46150, 2001.
- Nicholson, T., C.-F. Tsang and A. Hutter, Scientific and technical issues related to Mayak and Chernobyl sites: Summary of a round table discussion, *Hydrological Science and Technology*, 16(1-4), 3-11, Berkeley Lab Report LBNL-48689, 2000.
- Nihei, K. T., L.B. Hilbert, N. G. W. Cook, S. Nakagawa, and L.R. Myer, Frictional effects on the volumetric strain of sandstone, *Int. J. Rock Mech. Min. Sci. & Geomech.*, 37, 121-132, Berkeley Lab Report 2000.
- Nihei, K.T., L.R. Myer, P. Goldstein, K. Mayeda, and R.A. Parker, Natural fracture characterization using passive seismic waves, *GasTIPS*, 6(1), 21-25, Berkeley Lab Report 2000.
- Oh, K.C., Biologically active, Acceptance criteria and process guidance, Berkeley Lab Report LBNL-46862, 2000.
- Oldenburg, C. M. and K. Pruess, Simulation of propagating fronts in geothermal reservoirs with the implicit Leonard total variation diminishing scheme, *Geothermics*, 29, 1-25, Berkeley Lab Report 2000.

- Oldenburg, C.M., K. Pruess and S.M. Benson, Process modeling of CO<sub>2</sub> injection into natural gas reservoirs for carbon sequestration and enhanced gas recovery, *Energy and Fuels*, 15, 293-298, Berkeley Lab Report LBNL-45820, 2001.
- Oldenburg, C.M., S.E. Borglin and G.J. Moridis, Numerical Simulation of the Flow of Ferrofluids in Porous Media, *Transport in Porous Media*, 38(319-344), Berkeley Lab Report LBNL 40146, 2000.
- O'Sullivan, M.J., K. Pruess and M.J. Lippmann, State-of-the-art of geothermal reservoir simulation, *Geothermics*, 30(4), 395-429, Berkeley Lab Report LBNL-44699, 2001.
- Pan, L. and C.K. Ho, Analysis Comparing Advective-Dispersive Transport Solution to Particle Tracking, ANL-NBS-HS-000001 REV00, Berkeley Lab Report LBID-2336, 2000.
- Pan, L., H.H. Liu, M. Cushey and G.S. Bodvarsson, DCPT v1.0 - New particle tracker for modeling transport in dual-continuum - User's Manual, Berkeley Lab Report LBNL-42958, 2001.
- Pan, L., J. Hinds, C. Haukwa, Y.-S. Wu and G.S. Bodvarsson, WinGridder - An interactive grid generator for TOUGH - A user's manual (Version 1.0), Berkeley Lab Report LBNL-42957, 2001.
- Park, S.-H., G. Sposito, R. Sutton, J.A. Greathouse, Formation and Stability of Methane Hydrates in Clay Interlayers, *Earth Sciences Division 1999-2000 Annual Report*, Berkeley Lab Report 2001.
- Park, S.-H. and G. Sposito, Monte Carlo simulation of total radial distribution functions for interlayer water in Li-, Na- and K- Montmorillonite hydrates, *The Journal of Physical Chemistry B*, 104(19), Berkeley Lab Report LBNL-45842, 2000.
- Park, S.-H. and G. Sposito, Monte Carlo simulations of total radial distribution functions for interlayer water in Li-, Na-, and K- montmorillonite hydrates, *The Journal of Physical Chemistry B*, 104(19), 4642-4648, Berkeley Lab Report LBNL-48579, 2000.
- Park, S.-H., G. Sposito, R. Sutton and J.A. Greathouse, Density functional theory (DFT) calculations on the structures of 2:1 clay minerals, Berkeley Lab Report LBNL-48577, 2001.
- Parra, J.O., C.L. Hackert, A.W. Gorody and V. Korneev, Detection of guided waves between gas wells for reservoir characterization, *Geophysics*, 67(1), 38-49, Berkeley Lab Report LBNL-48523, 2001.
- Patzek, T.W. and A. De, Lossy, Transmission Line Model of Hydrofractured Well Dynamics, *Journal of Petroleum Science and Engineering*, 25(1-2), 59-77, Berkeley Lab Report 2000.
- Patzek, T.W. and D.B. Silin, Control of Fluid Injection into a Low-Permeability Rock - 1. Hydrofracture Growth, *Transport in Porous Media*, 43(3), 537-555, Berkeley Lab Report 2001.
- Patzek, T.W. and D.B. Silin, Shape factor and hydraulic conductance in noncircular capillaries. I. One-Phase Creeping Flow, *Journal of Colloid and Interface Science*, 236(2), 295-304, Berkeley Lab Report LBNL-48542, 2000.
- Pellegrino, G.Q. and N.L. Miller, TOPMODEL calibration and verification study in the Smith Basin, CA and technology transfer for Piracicaba Basin, Brazil, Berkeley Lab Report LBID-2381, 2001.

- Piotrowski, A.M., D.-C. Lee, J.N. Christensen, K.W. Burton, A.N. Halliday, J.R. Hein and D. Gunther, Changes in erosion and ocean circulation recorded in the Hf isotopic compositions of North Atlantic and Indian Ocean ferromanganese crusts, *Earth and Planetary Science Letters*, 181(3), 315-325, Berkeley Lab Report LBNL-48589, 2000.
- Plaza, G., K. Ulfig, and T. C. Hazen, Use of Molecular Techniques in Bioremediation, *Acta Microbiologica Polonica*, 50, 205-218, Berkeley Lab Report, LBNL-49587, 2001.
- Podgorney, R., T. Wood, B. Faybishenko, and T. Stoops, Spatial and temporal instabilities in water flow through variably saturated fractured basalt on a one-meter scale, Dynamics of Fluids in Fractured Rocks, Geophysical Monograph, 122, 129-146, Berkeley Lab Report LBNL-46551, 2000.
- Pruess, K. and J. S. Y. Wang, Numerical modeling of isothermal and nonisothermal flow in unsaturated fractured rock: A review, in flow and transport through unsaturated fractured rock, American Geophysical Union, 2nd, D.D. Evans, T. Nicholson and T.C. Rasmussen, eds., Geophysical Monograph 42, Washington D.C., 19-32, Berkeley Lab Report 2001.
- Pruess, K., Multiphase flow in fractured rocks - some lessons learned from mathematical models, Dynamics of Fluids in Fractured Rocks, 122, B. Faybishenko, P.A. Witherspoon and S. Benson, eds., Geophysical Monograph, Washington D.C., 225-234, Berkeley Lab Report LBNL-42372, 2000.
- Pruess, K., Two-Phase Unsaturated Flow at Yucca Mountain, Nevada: A Report on Current Understanding, in Flow and Transport through Unsaturated Fractured Rock, American Geophysical Union, 2nd, D.D. Evans, T. Nicholson and T.C. Rasmussen, eds., Geophysical Monograph 42, Washington D.C., 113-133, Berkeley Lab Report 2001.
- Pruess, K. and J. Garcia, Multiphase flow dynamics during CO<sub>2</sub> disposal into saline aquifers, Berkeley Lab Report LBNL-46793, 2000.
- Pruess, K., C.-F. Tsang, D. Law and C. Oldenburg, Intercomparison of simulation models for CO<sub>2</sub> disposal in underground storage reservoirs, Berkeley Lab Report LBNL-47353, 2001.
- Pruess, K., Multiphase fluid flow and heat transfer at Hanford single-shell tanks - a progress report on modeling studies, Berkeley Lab Report LBNL-45283, 2000.
- Quinn, N.W.T. and W.M. Hanna, A decision support system for adaptive real-time management of seasonal wetlands in California, (Environmental Information and Decision Support. Environmental Information and Indicators), 4, David A. Swayne, Ralf Denzer and Gerald Schimak, eds., Environmental Software Systems, Berkeley Lab Report LBNL-49206, 2001.
- Quinn, N.W.T., T.J. Lundquist, F.B. Green, M.A. Zarate, W.J. Oswald and T. Leighton, Algal-bacterial treatment facility removes selenium from drainage water, California Agriculture, 54, (6), University of California, Division of Agriculture and Natural Resources, Berkeley Lab Report 2000.
- Quinn, N.W.T., N.L. Miller, J.A. Dracup, L. Brekke, An integrated modeling system for environmental impact analysis of climate variability and extreme weather events in the San Joaquin Basin, California, *Advances in Environment Res.*, 5, 309-317, Berkeley Lab Report 2001.



- Ragot F., V. Ivanov, J. Wery, A. Garcia, D.L. Perry, G. Ouvrard, and E. Faulques, Spectroscopy of a Eu(III)-Imidazole Complex, *Synthetic Metals*, 120(773), Berkeley Lab Report 2001.
- Rector III, J.W., Q. Dong and T.W. Patzek, Passive characterization of hydrofracture properties using signals from hydraulic pumps, *Journal of Petroleum Science and Engineering*, 27(1-2), 49-58, Berkeley Lab Report 2000.
- Riley, W.J. and P.A. Matson, A mechanistic model of denitrified N<sub>2</sub>O and N<sub>2</sub> evolution from soil, *Soil Science*, 165, 237-249, Berkeley Lab Report 2000.
- Rillig, M.C., S.F. Wright, K.A. Nichols, W.F. Schmidt, and M.S. Torn, Large contribution of arbuscular mycorrhizal fungi to soil carbon pools in tropical forest soils, *Plant and Soil*, 233(2), 167-177, Berkeley Lab Report.
- Rubin, Y., S. Hubbard, S., Amy Wilson and M. Cushey, A., Aquifer characterization, The Handbook of Groundwater Engineering, Jacques W. Delleur, ed., CRC Press, Berkeley Lab Report LBNL-46471, 2000.
- Rutqvist, J., C.-F. Tsang and O. Stephansson, Uncertainty in the maximum principal stress estimated from hydraulic fracturing measurements due to the presence of the induced fracture, *International Journal of Rock Mechanics and Mining Sciences*, 37(1-2), 107-120, Berkeley Lab Report LBNL-43953, 2000.
- Rutqvist, J., L. Borgesson, M. Chijimatsu, A. Kobayashi, L. Jing, T.S. Nguyen, J. Noorishad and C.-F. Tsang, Thermohydromechanics of partially saturated geological media: Governing equations and formulation of four finite element models, *International Journal of Rock Mechanics and Mining Sciences*, 38, 105-127, Berkeley Lab Report LBNL-45502, 2001.
- Rutqvist, J., L. Borgesson, M. Chijimatsu, T.S. Nguyen, L. Jing, J. Noorishad and C.F. Tsang, Coupled thermo-hydro-mechanical analysis of a heater test in fractured rock and bentonite at Kamaishi Mine -- Comparison of field results to predictions of four finite element codes, *International Journal of Rock Mechanics and Mining Sciences*, 38, 129-142, Berkeley Lab Report LBNL-45503, 2001.
- Salve, R. and B. Allen-Diaz, Variations in flow in a rangeland catchment, *Journal of Range Management*, 54, 44-51, Berkeley Lab Report 2001.
- Salve, R. and Tetsu K. Tokunaga, Flow process in a rangeland catchment in California, *Journal of Range Management*, 53(5), 489-498, Berkeley Lab Report LBNL-44899, 2000.
- Salve, R. T., J.S.Y. Wang and T.K. Tokunaga, A probe for measuring wetting front migration in rocks, *Water Resources Research*, 36, 1359-1367, Berkeley Lab Report LBNL-43203, 2000.
- Salve, R., J. S. Y. Wang and C. Doughty, Liquid flow in unsaturated fractured welded tuffs: II Numerical Modeling, *Journal of Hydrology*, 256, 80-105, Berkeley Lab Report 2000.
- Salve, R., Variations in soil moisture content in a rangeland catchment, *Journal of Range Management*, 54, 44-51, Berkeley Lab Report LBNL-44901, 2000.

- Salve, R. and C.M. Oldenburg, Water flow within a fault in altered nonwelded tuff, *Water Resources Research*, 37(12), 3043-3056, Berkeley Lab Report LBNL-45844, 2001.
- Salve, R., J.S.Y. Wang and C. Doughty, Liquid-release tests in unsaturated fractured welded tuffs: I. Field Investigations, *Journal of Hydrology*, 256, 60-79, Berkeley Lab Report LBNL-44411, 2000.
- Savage, K. S., T. N. Tingle, P. A. O'Day, G. A. Waychunas and D. K. Bird, Arsenic speciation in pyrite and secondary weathering phases, Mother Lode Gold District, Tuolumne County, California, *Applied Geochemistry*, 15(8), 1219-1244, Berkeley Lab Report 2000.
- Seol, Y. and F.W. Schwartz, Oxidation of DNAPL mixtures using potassium permanganate with a phase-transfer-catalyst; kinetic results from a digital photographic monitoring method, *Ground Water Monitoring and Remediation*, Spring, 124-132, Berkeley Lab Report 2000.
- Seol, Y. and F.W. Schwartz, Phase-transfer-catalyst applied to oxidation of trichloroethylene by potassium permanganate, *Journal of Contaminant Hydrology*, 44(2), 185-201, Berkeley Lab Report 2000.
- Seol, Y. and L.S. Lee, Coupled effects of treated effluent irrigation and wetting/drying cycles on transport of atrazine and prometryn through unsaturated laboratory columns, *Journal of Environmental Quality*, 30, 1644-1652, Berkeley Lab Report 2001.
- Seol, Y. and L.S. Lee, Effect of dissolved organic matter from treated effluents on sorption of atrazine and prometryn by soils, *Soil Science Society of America Journal*, 64(6), 1976-1983, Berkeley Lab Report 2000.
- Shaughnessy, D. A., H. Nitsche, R. J. Serne, D. K. Shuh, G. A. Waychunas, C.H. Booth, and H. S. Gill, Interfacial reaction studies of plutonium on manganese, Berkeley Lab Report 2000.
- Shaughnessy, D.A., H. Nitsche, R. Jeffrey Serne, C.H. Booth, D.K. Shuh, G.A. Waychunas and H.S. Gill, Interfacial reaction studies of plutonium on manganese oxide hydroxide mineral surfaces, *Abstracts of Papers American Chemical Society*, 220(Part 1), ENVR 227, Berkeley Lab Report 2000.
- Shvidler, M. and K. Karasaki, Multi-continuum description of flow in composite heterogeneous media, *Water Resources Research*, 36(12), 3615-3630, Berkeley Lab Report LBNL-44563, 2000.
- Silin, D.B. and T.W. Patzek, Control of Water Injection into a Layered Formation, SPE 59300, *SPE Journal*, 6(3), 253-261, Berkeley Lab Report 2001.
- Silin, D.B. and T.W. Patzek, Water Injection into a Low-Permeability Rock - 2. Control Model, *Transport in Porous Media*, 43(3), 557-580, Berkeley Lab Report 2001.
- Silin, D.B. and T.W. Patzek, Support-operators method in the identification of permeability tensor orientation, SPE59372, *SPE Journal*, Berkeley Lab Report LBNL-46517, 2001.
- Simmons, A., A. Unger and M. Murrell, Natural Analogs for the Unsaturated Zone, ANL-NBS-HS-000007 REV00, Berkeley Lab Report LBID-2335, 2000.

- Sonnenthal, E. and N. Spycher, Drift-Scale Coupled Processes (DST and TH Seepage) Models, MDL-NBS-HS-000001 REV00, Berkeley Lab Report LBID-2340, 2000.
- Sonnenthal, E. L., Drift-Scale Thermal-Hydrological-Chemical Processes and Models. Near-Field Environment Process Model Report, CRWMS M&O, Berkeley Lab Report 2000.
- Spycher, N., E. Sonnenthal, and J. Apps, Predicting fluid compositions and mineral alteration around nuclear waste emplacement tunnels, Berkeley Lab Report LBNL-47529, 2001.
- Stirling, C.H., D.-C. Lee, J.N. Christensen and A.N. Halliday, High Precision In Situ  $^{238}\text{U}$ - $^{234}\text{U}$ - $^{230}\text{Th}$  Isotopic Analysis Using Laser Ablation Multiple-Collector ICPMS, *Geochimica et Cosmochimica Acta*, 64(21), 3737-3750, Berkeley Lab Report LBNL-46543, 2000.
- Stocking, A. J., R. A. Deeb, A. E. Flores, W. T. Stringfellow, J. Talley, R. Brownell, and M. C. Kavanaugh, Bioremediation of MTBE: a practical perspective, *Biodegradation*, 11, 187—201, Berkeley Lab Report LBNL 45016, 2000.
- Stringfellow, W. T. and E. H. Rychel, Assay of MTBE biodegradation potential in subsurface soils, *Abstracts of the General Meeting of the American Society for Microbiology*, 100(552), Berkeley Lab Report 2000.
- Stringfellow, W.T., R.D. Hines, D.K. Cockrum and S. T. Kilkenny, Factors influencing biological treatment of MTBE in fixed film reactors, Bioremediation and Phytoremediation of Chlorinated and Recalcitrant Compounds, G. B. Wickramanayake, ed., Battelle Press, Columbus, OH, 175-181, Berkeley Lab Report LBNL-45487, 2000.
- Stringfellow, W.T., Evaluation of bacterial biocatalysts for terminal alkane oxidations, *Abstracts of Papers American Chemical Society*, 221(1-2), BIOT 242., Berkeley Lab Report 2001.
- Stringfellow, W.T., Max Q. Hu, R. TerBerg and G. Castro, Using high performance liquid chromatography (HPLC) for the measurement of fluorobenzoate tracers in the presence of interfering compounds, Berkeley Lab Report LBNL-47921, 2001.
- Stringfellow, W.T., R.D. Hines and S.T. Kilkenny, Applying cometabolic biological reactions for the ex-situ treatment of MTBE contaminated groundwater, *Abstracts of Papers American Chemical Society*, 219(1-2), ENVR 231., Berkeley Lab Report 2000.
- Stringfellow, W.T., R.D. Hines Jr., D.K. Cockrum and S.T. Kilkenny, Factors influencing biological treatment of MTBE contaminated ground water, Berkeley Lab Report LBNL-48941, 2001.
- Su, G. W., J. T. Geller, K. Pruess and J. R. Hunt, Solute Transport Along Preferential Flow Paths in Unsaturated Fractures, *Water Resources Research*, 37(10), 2481-2491, Berkeley Lab Report LBNL-49205, 2001.
- Su, G., J. Geller, K. Pruess and J. R. Hunt, Overview of Preferential Flow in Unsaturated Fractures, Dynamics of Fluids in Fractured Rock, B. Faybishenko, P.A. Witherspoon and S. Benson, eds., *Geophysical Monograph* 122, Washinton D.C., 147-155, Berkeley Lab Report 2000.

- Sutton, R. and G. Sposito, Molecular simulation of interlayer structure & dynamics in 12.4 Angstrom Cs-smectite hydrates, *Journal of Colloid & Interface Science*, 237(2), 174-184, Berkeley Lab Report LBNL-47926, 2001.
- Tokunaga, T.K. and J. Wan, Approximate boundaries between different flow regimes in fractured rocks, *Water Resources Research*, 37(8), 2103-2111, Berkeley Lab Report LBNL-47854, 2001.
- Tokunaga, T.K. and J. Wan, Surface-zone flow in unsaturated rock fractures, *Water Resources Research*, 37, 287-296, Berkeley Lab Report LBNL-44948, 2001.
- Tokunaga, T.K., J. Wan, M.K. Firestone, T.C. Hazen, E. Schwartz, S.R. Sutton and M. Newville, Chromium diffusion and reduction in soil aggregates, *Environmental Science Technology*, 35(15), 3169-3174, Berkeley Lab Report LBNL-48032, 2001.
- Tokunaga, T., J. Wan and S.R. Sutton, Transient film flow on rough fracture surfaces, *Water Resources Research*, 36(7), 1737-1746, Berkeley Lab Report LBNL-45598, 2000.
- Trautz, R.C. and J.S.Y. Wang, Evaluation of Seepage into an Underground Opening Using Small-Scale Experiments, Yucca Mountain, Nevada, *Mining Engineering*, 53(12), 41-44, Berkeley Lab Report 2001.
- Tretbar, D.R., G.B. Arehart and J.N. Christensen, Dating gold deposition in a Carlin-type gold deposit using Rb/Sr methods on the mineral galkhaite, *Geology*, 28(10), 947-950, Berkeley Lab Report LBNL-46544, 2000.
- Truesdell, A. H., B. Smith, S. Enedy and M.J. Lippman, Recent Geochemical Tracing of Injection-Related Reservoir Processes in the NCPA Geysers Field, *Geothermal Resources Council Trans*, 25, 475-489, Berkeley Lab Report LBNL-47874, 2001.
- Tsang, C.F. and G. Li, Seepage Model for PA Including Drift Collapse, MDL-NBS-HS-000002 REV 00, Berkeley Lab Report LBID-2332, 2000.
- Tsang, C-F., O. Stephansson and J.A. Hudson, A discussion of the THM processes associated with nuclear waste repositories, *International Journal of Rock Mechanics and Mining Science*, 37(1-2), 397-402, Berkeley Lab Report 2000.
- Tsang, C.-F., L. Moreno, Y.W. Tsang and J. Birkholzer, Dynamic channeling of flow and transport in saturated and unsaturated heterogeneous media, Flow and Transport through Unsaturated Fractured Rock, 2nd edition, Geophysical Monograph 42, Thomas J. Nicholson Daniel D. Evans, Todd C. Rasmussen, eds., American Geophysical Union, Berkeley Lab Report LBNL-45474, 2000.
- Tsang, Y., A field test for understanding thermally driven coupled processes partially saturated fractured welded tuff, *International Journal of Rock Mechanics and Mining Science*, 37(1-2), 337-356, Berkeley Lab Report 2000.
- Tsang, Y.W. and C.-F. Tsang, A particle tracking method for advective transport in a fracture with diffusion into finite matrix blocks with application to tracer injection-withdrawal testing, *Water Resources Research*, 37(3), 831-836, Berkeley Lab Report LBNL-43952, 2001.

- Tsang, Y.W., K. Huang, and G. S. Bodvarsson, Estimation of the heterogeneity of fracture permeability by simultaneous modeling of multiple air-injection tests in partially saturated fractured tuffs, *Dynamics of fluids in fractured rocks: concepts and recent advances*, B. Faybishenko, P. A. Witherspoon, and S. Benson, eds., Geophysical Monograph, 122, 99-114, Berkeley Lab Report LBNL-48547, 2000.
- Unger, A.J.A., B. Faybishenko, G.S. Bodvarsson and A.M. Simmons, A Three-Dimensional Model for Simulating Ponded Infiltration Tests in the Variably Saturated Fractured Basalt at the Box Canyon Site, Idaho, Berkeley Lab Report LBNL-44633, 2000.
- Van Loy, M.D., W.J. Riley, J.M. Daisey, and W.W. Nazaroff, Dynamic behavior of semivolatile organic compounds in indoor air. 2. Nicotine and phenanthrene with carpet and wallboard, *Environmental Science and Technology*, 35, 560-567, Berkeley Lab Report 2000.
- Vasco, D. W. and A. Datta-Gupta, Asymptotics, saturation fronts and high resolution reservoir characterization, *Transport in Porous Media*, 42(3), Berkeley Lab Report LBNL-46457, 2000.
- Vasco, D. W. and K. Karasaki, Inversion of pressure observations: An integral formulation, *Journal of Hydrology*, 253, 27-40, Berkeley Lab Report 2001.
- Vasco, D. W., K. Karasaki and C. Doughty, Using surface deformation to image reservoir dynamics, *Geophysics*, 65(1), 1-16, Berkeley Lab Report 2000.
- Vasco, D. W., An algebraic formulation of geophysical inverse problems, *Geophysical Journal International*, 142(3), Berkeley Lab Report LBNL-44522, 2000.
- Vasco, D. W., Karasaki, K. and Kishida, K., A coupled inversion of pressure and surface displacement, *Water Resources Research*, 37(12), 3071-3089, Berkeley Lab Report 2001.
- Vasco, D., Jr. Wicks, C., K. Karasaki and O. Marques, Geodetic imaging: Reservoir monitoring using satellite interferometry, *Geophysical Journal International*, 200, 1-12, Berkeley Lab Report LBNL-46464, 2001.
- Vasco, D.W., H. Keers and K. Karasaki, Estimation of reservoir properties using transient pressure data: An asymptotic approach, *Water Resources Research*, 36(12), 3447-3465, Berkeley Lab Report LBNL-46459, 2000.
- Veerapaneni, S., J. Wan, and T. K. Tokunaga, Particle motion in film flow, *Environmental Science and Technology*, 34, 2465-2471, Berkeley Lab Report 2000.
- Veerapaneni, Srinivas, J. Wan and T.K. Tokunaga, Motion of particles in film flow, *Environmental Science & Technology*, 34(12), 2465-2471, Berkeley Lab Report LBNL-45560, 2000.
- Wan, J., T. K. Tokunaga, T. R. Orr, J. O'Neill and R. W. Connors, Glass casts of rock fracture surfaces: A new tool for studying flow and transport, *Water Resour. Res.*, 36, 355-360, Berkeley Lab Report LBNL-38892, 2000.

- Wan, Jiamin, S. Veerapaneni, F. Gabelle and T.K. Tokunaga, Generation of stable microbubbles and their transport through porous media, *Water Resources Research*, 37(5), 1173-1182, Berkeley Lab Report LBNL-45559, 2001.
- Wang, J. S. Y., Remembering Neville G.W. Cook, the scientist, colleague and friend - Charm, Cinch, and Champ, *International Journal of Rock Mechanics and Mining Science*, 37(1-2), 28-30, Berkeley Lab Report 2000.
- Wang, J.S.Y., P.J. Cook, R.C. Trautz, Q. Hu and R. Salve, In Situ Field Testing of Processes, ANL-NBS-HS-000005 REV 00. Berkeley Lab Report LBID-2323, 2000.
- Waychunas, G.A., P. Liu, and D. K. Shuh, Simulation of  $\text{Ca}^{2+}$  K and L edges via Multiple Scattering and Multiplet calculations, for *Physical Review B*, Berkeley Lab Report 2001.
- Witherspoon, P., Investigations at Berkeley on fracture flow in rocks: From the parallel plate model to chaotic systems, Dynamics of Fluids in Fractured Rock, *Geophysical Monograph 122*, American Geophysical Union, Berkeley Lab Report LBNL-46782, 2000.
- Wood, T. R. and B. Faybishenko, Large-scale field investigations in fractured basalt in Idaho: Lessons learned, Vadose Zone Science and Technology Solutions, B. B. Looney and R. Falta, eds., Battelle Press, OH, 396-405, Berkeley Lab Report 2000.
- Wood, T. R., R.R. Podgorney and B. Faybishenko, Small scale field tests of water flow in a fractured rock vadose zone, Vadose Zone Science and Technology Solutions, B. B. Looney and R. Falta, eds., Battelle Press, OH, Section in CD-Rom, Berkeley Lab Report 2000.
- Wu, Y.-S., J. Li, T. Xu, C. Haukwa, W. Zhang, H.H. Liu and C.F. Ahlers, UZ Flow Models and Submodels, MDL-NBS-HS-000006 REV 00. Berkeley Lab Report LBID-2330, 2000.
- Wu, Y-S. and K. Pruess, Integral solutions for transient fluid flow through a porous medium with pressure-dependent permeability, *International Journal of Rock Mechanics and Mining Science*, 37(1-2), 51-61, Berkeley Lab Report 2000.
- Wu, Y-S. and P.A. Forsyth, On the selection of primary variables in numerical formulation for modeling multiphase flow in porous media, *Journal of Contaminant Hydrology*, 48(3-4), 277-304, Berkeley Lab Report 2001.
- Wu, Y-S., On the effective continuum method for modeling multiphase flow, multicomponent transport and heat transfer in fractured rock, Dynamics of Fluids in Fractured Rocks, Concepts and Recent Advances, B. Faybishenko, P.A. Witherspoon and S. Benson, eds., AGU Geophysical Monograph, Washington D.C., 299-312, Berkeley Lab Report 2000.
- Wu, Y.-S. and K. Pruess, Numerical simulation of nonisothermal multiphase tracer transport in heterogeneous fractured porous media, *Advances in Water Resources*, 23(7), 699-723, Berkeley Lab Report LBNL-43534, 2000.



- Wu, Y.-S., A virtual node method for handling well bore boundary conditions: In modeling multiphase flow in porous and fractured media, *Water Resources Research*, 36(3), 807-814, Berkeley Lab Report LBNL-47533, 2000.
- Wu, Y.-S., Non-Darcy displacement of immiscible fluids in porous media, *Water Resources Research*, 37(12), 2929, Berkeley Lab Report LBNL-45228, 2001.
- Xu, T. and K. Pruess, Modeling Multiphase Non-isothermal Fluid Flow and Reactive Geochemical Transport in Variably Saturated Fractured Rocks: 1. Methodology, *American Journal of Science*, 301, 16-33, Berkeley Lab Report 2001.
- Xu, T., E. Sonnenthal, N. Spycher, K. Pruess, and G. Brimhall, Modeling multiphase non-isothermal fluid flow and reactive geochemical transport in variably saturated fractured rocks: 2. Applications to supergene copper enrichment and hydrothermal flows, *American Journal of Science*, 301, 34-59, Berkeley Lab Report LBNL-45123, 2001.
- Xu, T., K. Pruess and G. Brimhall, Chapter 5: Oxidative weathering chemical migration through an unsaturated-saturated medium, Vadose Zone Science and Technology Solutions, Westinghouse Savannah River Company, U.S. Department of Energy, Berkeley Lab Report 2000.
- Xu, T. and K. Pruess, Thermophysical properties of sodium nitrate and sodium chloride solutions and their effects on fluid flow in unsaturated media, Berkeley Lab Report LBNL-48913, 2001.
- Xu, T. and K. Pruess, On fluid flow and mineral alteration in fractured caprock of magmatic hydrothermal systems, *Journal of Geophysical Research*, 106(B2), 2121-2138, Berkeley Lab Report LBNL-44804, 2001.
- Xu, T., J.A. Apps and K. Pruess, Analysis of mineral trapping for CO<sub>2</sub> disposal in deep aquifers, Berkeley Lab Report LBNL-46992, 2001.
- Xu, T., S.P. White, K. Pruess and G.H. Brimhall, Modeling of pyrite oxidation in saturated and unsaturated subsurface flow systems, *Transport in Porous Media*, 39(1), Berkeley Lab Report LBNL-45508, 2000.
- Zawislanski, P.T., H.S. Mountford, E.J. Gabet, A.E. McGrath and H.C. Wong, Selenium distribution and fluxes in intertidal wetlands, San Francisco Bay, California, *Journal of Environmental Quality*, 30(3), 1080-1091, Berkeley Lab Report LBNL-48714, 2001.
- Zawislanski, P.T., S. Chau, H. Mountford, H.C. Wong and T.C. Sears, Accumulation of selenium and trace metals on plant litter in a tidal marsh, *Estuarine, Coastal and Shelf Science*, 52(5), 589-603, Berkeley Lab Report LBNL-48457, 2001.
- Zhang, S., N. Miller, C. Mauro and Z. Jianyun, Calibration and verification study of TOPMODEL in the Leonhe Basin and the Yilvohe Basin in China, Berkeley Lab Report LBID-2313, 2000.