

## GP

### January 2003 – January 2004

Becker, A., Morrison, H.F., and Pandit, T. Bandwidth requirements for metal detectors. *EAGE Annual Meeting 2003*. Stavanger, Norway, LBNL-52108 Ext. Abs.

Chen, Jinsong, and Hoversten, G. Michael. Joint stochastic inversion of geophysical data for reservoir parameter estimation. *SEG Annual Meeting*. Dallas, TX. October 26-31, 2003. LBNL-52489 Abs.

Chen, Jinsong, Hubbard, Susan, Rubin, Yoram, Murray, Chris, Roden, Eric, and Majer, Ernest;. 2003. Geochemical Characterization Using Geophysical Data: A Case Study at the South Oyster Bacterial Transport Site in Virginia. *Water Resources Research*, LBNL-51980.

Chen, Jinsong, and Hubbard, Susan. Bayesian Integration of Geophysical Data for Subsurface Parameter Estimation. *SAGEEP 2004*. Colorado Springs, CO. February 22-26, 2004. LBNL-53645 Abs.

Chen, Jinsong, Hubbard, Susan, Fienen, Michael, Mehlhorn, Tonia, and Watson, David. Estimating Hydrogeological Zonation Using High-Resolution Geophysical Data and Markov Chain Monte Carlo Methods. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. EOS. Trans. AGU, **84**(46): pp. Abstract #H21F-04, LBNL-53743 Abs.

Chen, Jinsong, Hubbard, Susan, Rubin, Yoram, Murray, Chris, Roden, Eric, and Majer, Ernest. 2003. Geochemical Characterization Using Geophysical Data and Markov Chain Monte Carlo Methods: A Case Study at the South Oyster Bacterial Transport Site in Virginia. *Water Resources Research*, LBNL-54059.

Chen, Jinsong, Hubbard, Susan, and Peterson, John. A Comparison between Hydrogeophysical Characterization Approaches Applied to Granular Porous and Fractured Media. *International Symposium on Fractured Rock*. Berkeley, CA. February 10-12, 2004. LBNL-54157 Ext. Abs.

Commer, Michael, and Newman, Gregory. 2004. A Parallel Finite-Difference Approach for Three-Dimensional Transient Electromagnetic Modeling With Galvanic Sources. *Geophysics*, LBNL-54725.

Daley, Thomas M., Gritto, Roland, and Majer, Ernest L. 2003. Single well seismic imaging of a gas-filled hydrofracture, Berkeley, CA LBNL-53601.

Daley, T. M., Schoenberg, M., Rutqvist, J., and Nihei, K. Coupled modeling of time-lapse change in seismic propagation and permeability in fractured reservoirs due to fluid

injection. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. LBNL-53753 Abs.

Freifeld, Barry M., Kneafsey, Tim J., Tomutsa, Liviu, and Pruess, Jacob. Development of a Portable X-Ray Computed Tomographic Imaging System for Drill Site Investigation of Recovered Core. *2003 International Symposium of the Society of Core Analysts*. Paris, France, LBNL-52088 Abs.

Gasperikova, Erika, Cuevas, Nestor, and Morrison, H. Frank. 2003. Natural Field Induced Polarization for Mapping of Deep Mineral Deposits: A case study from Arizona. *Geophysics*, LBNL-52485.

Gasperikova, Erika, Hoversten, G. Michael, Ryan, Michael P., Kauahikaua, James P., Newman, Greg A., and Cuevas, Nestor. 2003. Magnetotelluric Investigations of Kilauea Volcano, Hawaii. Part I: Experiment Design and Data Processing. *Journal of Geophysical Research*, LBNL-53341 Part I.

Gasperikova, Erika. A new-generation EM system for the detection and classification of buried metallic objects. *Society of Exploration Geophysicists International Exposition and Seventy-Third Annual Meeting*. Dallas, TX. October 26-31, 2003. LBNL-53963.

Geller, Jil T., Ajo-Franklin, Jonathan B., and Majer, Ernest L. Effect of Immiscible Liquid Contaminants on P-Wave Transmission Through Natural Aquifer Samples. *Annual Meeting/SAGEEP*. San Antonio, TX. April 6-10, 2003. LBNL-52131.

Gritto, Roland, Romero, Arturo E., and Daley, Thomas M.;. 2003. Results of a VSP Experiment at the Resurgent Dome, Long Valley Caldera, California. *Geophysical Research Letters*, LBNL-52488.

Gritto, Roland, Daley, Thomas M., and Myer, Larry R. Imaging of CO2 Injection During an Enhanced-Oil-Recovery Experiment. *Underground Injection Science and Technology Symposium*. Berkeley, CA. October 22-25, 2003. pp. 1-12, LBNL-52626.

Gritto, Roland, and Majer, Ernest L. Seismic Detection of Fault and Fracture Systems. *Dynamics of Fluids in Fractured Rock; 2nd International Symposium*. Berkeley, CA. February 10-12, 2004. LBNL: pp. A6-A12, LBNL-54623 Ext. Abs.

Gritto, Roland, and Majer, Ernest L. Seismic Methods for Resource Exploration in Enhanced Geothermal Systems. *Geothermal Resources Council Annual Meeting*. Morelia, Mexico. October 12-15, 2003. *Geothermal Resources Council Transactions*, **27**: pp. 223-226, LBNL-52967.

Gritto, Roland. Subsurface void detection using seismic tomographic imaging. *Geophysical Technologies for Detecting Underground Coal Mine voids*. Lexington, KY. July 28-30,2003. LBNL-53227.

Gritto, Roland, Kneafsey, Timothy, and Tomutsa, Liviu. Core evaluation of hydrologic and seismic properties of methane-bearing coals. *2003 Symposium of The Society of Core Analysts*. Pau, France. September 21-24, 2003. LBNL-52078 Abs.

Gritto, Roland, and Majer, Ernest. Numerical Seismic Studies of Fault Detection in Geothermal Reservoirs. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. LBNL-53745 Abs.

Grote, K., Hubbard, S., and Rubin, Y. Influence of near-surface vegetation on the values and variability of soil water content. *American Geophysical Union Annual Fall Meeting 2003*. San Francisco, CA. December 6-10, 2003. EOS Trans AGU, **84**(46): pp. Abstract #H32c-0591, LBNL-53644 Abs.

Grote, K., Hubbard, S., Harvey, J., and Rubin, Y. 2003. Evaluation of Infiltration in Layered Pavements using Surface GPR Reflection Techniques. *Journal of Applied Geophysics*, LBNL-54150.

Hou, Zhangshuan, Rubin, Yoram, and Hubbard, Susan. Non-Linear, Bayesian Inversion in the Vadose Zone. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. EOS Trans. AGU, **84**(46): pp. Abstract #H31b-0464, LBNL-53741 Abs.

Hou, Zhangshuan, Hubbard, Susan, and Rubin, Yoram. 2003. Bayesian Forward and Inverse Modeling of the Vadose Zone Hydrogeology. *Water Resources Research*, LBNL-54325.

Hoversten, G.M., Milligan, P., Byun, J., Washbourne, J., Knauer, L.C., and Harness, P. 2003. Crosswell electromagnetic and seismic imaging: An examination of coincident surveys at a steam flood project. *Geophysics*, LBNL-48703.

Hoversten, G. Michael, Gasperikova, Erika, Newman, Greg A., Kauahikaua, James P., Ryan, Michael P., and Cuevas, Nestor. 2003. Magnetotelluric Investigations of Kilauea Volcano, Hawai'i. Part II. Numerical Modeling and Data. *Journal of Geophysical Research*, LBNL-53341 Part II.

Hoversten, G. Michael, and Gasperikova, Erika. 2003. Investigation Of Novel Geophysical Techniques For Monitoring Co2 Movement During Sequestration, *LBNL*, Berkeley, CA, pp. 94 LBNL-54110.

Hubbard, Susan. Advances and Challenges in Hydrogeophysics. *2004 Joint Assembly*. Montreal, Canada. May 17-21, 2004. LBNL-54701 Abs.

Hubbard, S., Grote, K., Lunt, I., and Rubin, Y. Near Surface Water Content Estimation Using GPR Data: Investigations Within California Vineyard. *EGS-AGU-EUG Joint Invited Assembly 2003*. Nice, France. April 6-11, 2003. European Geophysical Society(5, 02403), LBNL-52106 Abs.

Hubbard, S., Grote, K., Lunt, I., Pierce, L., and Rubin, G. M. Spatial and temporal variability of soil moisture content obtained using CPR data: Accuracy, resolution, and implications for precision viticulture. *GSA Annual Meeting*. Seattle, WA. November 2-4, 2003. LBNL-53370 Abs.

Hubbard, Susan, Chen, Jinsong, and Williams, Kenneth H. Characterization of Subsurface Properties and Processes using Geophysical Data. *Waste Management '04: Innovative Field Monitoring for Environmental Restoration*. Tuscon, AZ. February 29-March 4, 2004. LBNL-53596 Abs.

Hubbard, S., Pierce, L., Grote, K., and Rubin, Y.: Assessing the Relative Importance of Incorporating Spatial and Temporal Variability of Soil and Plant Parameters into Local Water Balance Models: Investigations Within a California Vineyard. *American Geophysical Union Fall Annual Meeting*. San Francisco, CA. December 6-10, 2003. EOS Trans. AGU, **84**(46): pp. Abstract #H42m-01, LBNL-53600 Abs.

Hubbard, Susan, and Williams, Ken. Geophysical Monitoring of Gas Production During Biostimulation. *Waste Management 2004*. Tuscon, AZ. March 1-5, 2004. LBNL-54324.

Huisman, J. A., Hubbard, S. S., Redman, D., and Annan, P. A. Soil Water Content Measurements With Ground Penetrating Radar: A Review. *AGU-EOS-EUG Joint Assembly 2003*. Nice, France. April 6-10, 2003. European Geophysical Society, **5**: pp. 02403, LBNL-52104 Abs.

Huisman, J. A., Hubbard, S. S., Redman, J. D., and Annan, A. P. 2003. Measuring soil water content with ground-penetrating radar: A review. *Vadose Zone Journal*, **2**, pp. 476-491, LBNL-52357.

Johnson, Lane R., and Nadeau, Robert M. 2003. Asperity Model of an Earthquake - Dynamic Problem. *Bulletin of the Seismological Society of America*, LBNL-52630.

Kim, Hee Joon, Lee, Ki Ha, and Wilt, Michael. 2003. A Fast Inversion Method for Interpreting Borehole Electromagnetic Data. *Earth Planets Space*, LBNL-52292.

Kim, Hee Joon, Lee, Ki Ha, and Wilt, Mike. Efficient crosshole electromagnetic imaging for detecting injected CO<sub>2</sub> migration. *SEG International Exposition and Seventy-Third Annual Meeting*. Dallas, TX. October 26-31, 2003. LBNL-52453 Abs.

Kim, Hee Joon, Song, Yoonho, Lee, Ki Ha, and Wilt, Michael J. 2003. Efficient crosswell EM tomography using localized nonlinear approximation. *Joint Exploration Geophysics, Multi-Tamsa, and Butsri-Tansa*, LBNL-53451.

Kim, Hee Joon, and Lee, Ki Ha. Electromagnetic Fields in a Non-Uniform Steel-Cased Borehole. *EAGE 66th Conference & Exhibition*. Paris, France. June 7-10, 2004. LBNL-54162 Ext. Abs.

Korneev, Valeri. 2003. Tube Wave Effects in Cross-Well Seismic Data. *Geophysics*, LBNL-53006.

Korneev, Valeri A., Daley, Thomas M., Silin, Dmitry B., and Goloshubin, Gennady M. Seismic low-frequency effects in fluid-saturated reservoirs. *Scale Frequency workshop*. Tulsa, OK. June 19-20, 2003. LBNL-53045 Abs.

Lee, K. H. 3-D full waveform inversion of seismic data; Part I. Theory. *SEG 2003*. Dallas, TX. October 24-31, 2003. LBNL-52665.

Li, Guoping, and Majer, Ernest L. 2003. Coiled tubing deployment makes crosswell seismic surveying successful in horizontal wells. *The Leading Edge*, **22**(5), pp. 454-458, LBNL-53005.

Lunt, I. A., Hubbard, S. S., and Rubin, Y. Soil moisture content estimation using ground-penetrating radar reflection travel time data. *American Geophysical Union (AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. EOS Trans AGU, **84**(46): pp. Abstrct #H21F-04, LBNL-53739 Abs.

Lunt, I. A., Hubbard, S. S., and Rubin, Y. 2003. Soil moisture content estimation using ground-penetrating radar reflection data. *Journal of Hydrology*, LBNL-53796.

Majer, Ernest, Slater, Lee, Ward, Andrew, Lesmes, David, Hubbard, Susan, and Cumbest, Randy. 2003. Airborne and Surface Geophysical Method Verification. Evest, Loreen, LBNL-52460.

Maultzsch, S. , Liu, E., Li, X.-Y. , Daley, T. M., Queen, J. H. , and Cox, D. Shear-Wave Splitting Analysis Of A 3d Vsp From The San Juan Basin. *EAGE 65th Conference & Exhibition*. Stavanger, Norway. June 2 - 5, 2003. LBNL-53969 Ext. Abs.

Moreau, John W., Chan, Clara S., Williams, Kenneth H., Suzuki, Yohey, and Banfield, Jillian F. Characterization and application of mechanisms of microbially induced biomineralization. *Goldschmidt Conference 2004*. Copenhagen, Denmark. June 5-11, 2004. LBNL-54460 Abs.

Morrison, H. F., Becker, A., Gasperikova, E., and Smith, J. T. 2003. Detection and classification of buried metallic objects, *Strategic Environmental Research and Development Program (SERDP)*, pp. 54 LBNL-53962.

Myer, Larry R. 2003. Geomechanical Risks in Coal Bed Carbon Dioxide Sequestration, *LBNL*, Berkeley, CA LBNL-53250.

Myer, Larry, Hovorka, Susan, Hoversten, Mike, Fouad, Khaled;, and Holtz, Mark;. Geophysical Characterization and Monitoring for the Frio Pilot Test. *AGU Fall Meeting*. San Francisco, CA. December 8-12, 2003. LBNL-53637 Abs.

Myer, Larry, and Surles, Terry. West Coast Regional Carbon Sequestration Partnership. *7th International Conference on Greenhouse Gas Control Technologies*. Vancouver, Canada. September 5-9, 2004. LBNL-54223 Ext. Abs.

Myer, Larry, Benson, Sally, Cole, David, Daley, Tom, Doughty, Christine, Dutton, Alan, Freifeld, Barry, Gunter, William, Holtz, Mark, Hovorka, Susan, Hoversten, Mike, Kennedy, B. Mack, Kharaka, Yousif, Knauss, Kevin, Knox, Paul, Majer, Ernie, Phelps, Tommy, Pruess, Karsten, and Robinson, John. Subsurface Monitoring and Verification at the Frio Pilot Test. *7th International Conference on Greenhouse Gas Control Technologies*. Vancouver, Canada. September 5-9, 2004. LBNL-54221 Ext. Abs.

Nadeau, R., and McEvilly, T. 2004. Periodic Pulsing of Characteristic Microearthquakes on the San Andreas Fault. *Science*, **303**, pp. 220-222, LBNL-53593.

Nakagawa, Seiji; Nihei, Kurt T.; and Myer, Larry R. 2003. Plane wave method for elastic wave scattering by a heterogeneous fracture. *Journal of Acoustical Society of America*, LBNL-52207.

Nihei, Kurt T. 2003. Natural Fracture Characterization Using Passive Seismic Illumination LBNL-46249.

Pride, Steven R., Harris, Jerry M., Johnson, David L., Mateeva, Albena, Nihei, Kurt T., Nowack, Robert L., Rector, James W., Spetzler, Hartmut, Wu, Rushan, Yamamoto, Tokuo, Berryman, James G, and Fehler, Michael. 2003. Permeability dependence of seismic amplitudes. *The Leading Edge*, **22**(7), pp. 518-525, LBNL-53683.

Pride, Steven R., Harris, Jerry M., Johnson, David L., Mateeva, Albena, Nihei, Kurt T., Nowack, Robert L., Rector, James W., Spetzler, Hartmut, Wu, Rushan, Yamamoto, Tokuo, Berryman, James G, and Fehler, Michael. 2003. Erratum: Acquisition/Processing--Permeability dependence of seismic amplitudes. *The Leading Edge*, **22**(7), pp. 698, LBNL-53735.

Pride, S. R., Berryman, J. G., and Harris, J. M. 2003. Seismic attenuation due to wave-induced flow. *Journal of Geophysical Research*, LBNL-53898.

Pride, Steven R. 2003. The Electrostatic Wave Theory of Frenkel. *Journal of Engineering Mechanics*, LBNL-54075.

Rector, James W., Zhng, Linbin, and Hoversten, G. Michael. Optimized Coefficient Finite Difference Scheme for the Wave Equation. *SEG 2002*. Salt Lake City, UT. October 6-11, 2002. LBNL-52514 Pstr.

Roberts, Peter M., Esipov, Igor B., and Majer, Ernest L. 2003. Elastic Wave Stimulation of Oil Reservoirs: Promising EOR Technology? *The Leading Edge*, **22**(5), pp. 448-453, LBNL-52234.

Rubin, Yoram, Chen, Jinsong, Hou, Zhangshuan, Kowalsky, Mike, and Hubbard, Susan. Bayes, Zadeh and Shannon, and the Development of a Structured Approach to the Hydrogeophysical Data Fusion Problem. *EGS-AGU-EUG Joint Invited Assembly 2003*. Nice, France. April 6-11, 2003. European Geophysical Society(5, 02403), LBNL-52105 Abs.

Rubin, Yoram N., Grote, Katharine, and Hubbard, Susan. On the combined use of surface and airborne measurements for basin scale assessment. *IUGG 2003*. Sapporo, Japan. July 4-10, 2003. LBNL-52844 Abs.

Rubin, Yoram, Kowalsky, M., Lunt, I., Hou, Z., and Hubbard, S. Inverse modeling in the vadose zone based on GPR-monitored flow transients. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. LBNL-53740 Abs.

Silin, D.B., Korneev, Valeri, and Goloshubin, Gennady. Pressure Diffusion Waves in Porous Media. *SEG 2003 73rd Annual Meeting*. Dallas, TX. October 26-31, 2003. pp. 4, LBNL-52536 Ext. Abs.

Smith, J. Torquil, and Morrison, H. Frank. 2003. Approximating Spheroid Inductive Responses Using Spheres. *Geophysics*, LBNL-54602.

Smith, J. Torquil, and Morrison, H. Frank. 2004. Optimizing Receiver configurations for Resolution of Equivalent Dipole Polarizabilities in Situ. *IEEE Transactions on Geoscience & Remote Sensing*, LBNL-54585.

Smith, J. Torquil, Morrison, H. Frank, and Becker, Alex. 2004. Parametric Forms and the Inductive Response of a Permeable Conducting Sphere. *Journal of Environmental & Engineering Geophysics*, LBNL-54621.

Toomey, Aoife, and Hoversten, G. M. Modeling 3D Anisotropic Seismic Wave Propagation on a Beowulf Cluster Using a Variable Grid Finite Difference Scheme. *SEG International Exposition & 72nd Annual Meeting*. Salt Lake City, UT. October 6-11, 2002. LBNL-52372 Pstr.

Toomey, Aoife, and Nakagawa, Seiji. 2004. Mechanical and Seismic Properties of Fractures under Static Shear Stress. *Journal of Geophysical Research*, LBNL-54860.

Toomey, Aoife, and Nakagawa, Seiji. Seismic monitoring of shear stress on fractures/faults. *Society of Exploration Geophysicists 73rd Annual International Meeting & Exposition*. Dallas, TX. October 25-31, 2003. LBNL-53913 Ext. Abs.

Toomey, Aoife, and Nakagawa, Seiji. Modeling the Mechanical and Seismic Response of Fractures. *EGS-AGU-EUG Joint Invited Assembly 2003*. Nice, France. April 6-11, 2003. LBNL-53914.

Toussaint, Renaud, and Pride, Steven R. 2004. Interacting Damage Models Mapped Onto Ising and Percolation Models. *Physical Review E*, LBNL-54777.

Tseng, Hung-Wen; Lee, Ki Ha; Becker, Alex;. A High Frequency Electromagnetic Impedance Imaging System. *SAGEEP 2003, Symposium on the Application of Geophysics to Engineering and Environmental Problems*. San Antonio, TX, LBNL-52111 Ext. Abs.

Tseng, Hung-Wen, and Lee, Ki Ha. Three Dimensional Interpretations of Single-Well Electromagnetic Data for Geothermal Applications. *29th Workshop on Geothermal Reservoir Engineering*. Stanford, CA. January 26-28, 2004. LBNL-54281.

Valette-Silver, Nathalie, Silver, Paul, Niu, Fenglin, Daley, Tom, and Majer, Ernest. Developing a methodology for imaging stress transients at seismogenic depth. *American Geophysical Union (AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. LBNL-53736 Abs.

Vasco, D. W., Datta Gupta, Akhil, Bechrens, Ron, Condon, Pat, and Rickett, James. 2003. Seismic imaging of reservoir flow properties: Time-lapse amplitude changes. *Geophysics*, LBNL-52354.

Vasco, D. W. 2003. Seismic imaging of reservoir flow properties: Time-lapse pressure changes. *Geophysics*, LBNL-52486.

Williams, Kenneth H., Kowalsky, Mike B., and Peterson, John E. 2003. High Resolution Imaging of Vadose Zone Transport Using Surface and Crosswell Ground Penetrating Radar Methods, *LBNL*, Berkeley, CA LBNL-53151.

Williams, K. H., Brockman, F. J., and Johnson, L. R. Monitoring Microbe-Induced Physical Property Changes Using High-Frequency Acoustic Waveform Data. *Fall 2002 American Geophysical Union Meeting*. San Francisco, CA. December 6-10,2002. **H12-0939**, LBNL-53148 Abs.

White, Don , Hirsche, Keith, Tom, Davis, Majer, Ernie, Hutcheon, Ian , Burrowes, Geoff, Adair, Ryan , Maxwell, Sean, and Hubert, Fabriol. Methods for the Prediction, Monitoring and Verification of CO<sub>2</sub> Movement: Results from the IEA Weyburn CO<sub>2</sub> Storage and Monitoring Project. *Third Annual Conference on Carbon Capture and Sequestration*. Alexandria, VA. May 2-6, 2004. LBNL-54509 Abs.