



Peter K. Kitanidis

Professor of Civil and Environmental Engineering

Bio

BIO

Kitanidis develops methods for the solution of interpolation and inverse problems utilizing observations and mathematical models of flow and transport. He studies dilution and mixing of soluble substances in heterogeneous geologic formations, issues of scale in mass transport in heterogeneous porous media, and techniques to speed up the decay of pollutants in situ. He also develops methods for hydrologic forecasting and the optimization of sampling and control strategies.

ACADEMIC APPOINTMENTS

- Professor, Civil and Environmental Engineering
- Member, Bio-X
- Member, Institute for Computational and Mathematical Engineering (ICME)

HONORS AND AWARDS

- L. G. Straub Award, Lorenz G. Straub Memorial (1979)
- W. L. Huber Civil Engineering Research Prize, ASCE (1994)
- Fellow, American Geophysical Union (2001)
- Highly Cited Researcher, ISI (2001)
- 2011 Hydrologic Sciences Award, AGU's Hydrology Section (2011)
- Pioneers in Groundwater Lecturer, ASCE (2011)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Editor in Chief, Journal of Hydrology (2013 - 2019)

PROFESSIONAL EDUCATION

- Dipl., Nat.Tech. Univ., Athens , Civil Engineering (1974)
- M.S., MIT , Civil Engineering (1976)
- PhD, MIT , Water Resources (1978)

LINKS

- <https://web.stanford.edu/~peterk>: <https://web.stanford.edu/~peterk>

Teaching

COURSES

2025-26

- Computations in Civil and Environmental Engineering: CEE 101D, CEE 201D (Aut)
- Data Assimilation: CEE 261D (Spr)
- Imaging with Incomplete Information: CEE 260G (Win)

2024-25

- Computations in Civil and Environmental Engineering: CEE 101D, CEE 201D (Aut)
- Environmental Engineering Seminar: CEE 269 (Aut)
- Imaging with Incomplete Information: CEE 260G, CME 262, GEOPHYS 260G (Win)

2023-24

- Computations in Civil and Environmental Engineering: CEE 101D, CEE 201D (Aut)
- Data Assimilation: CEE 261D (Win)
- Environmental Geophysics: GEOPHYS 385B (Aut)
- Imaging with Incomplete Information: CEE 260G, CME 262, GEOPHYS 260G (Spr)

2022-23

- Computations in Civil and Environmental Engineering: CEE 101D, CEE 201D (Aut)
- Data Assimilation: CEE 261D (Win)
- Imaging with Incomplete Information: CEE 260G, CME 262, GEOPHYS 260G (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Becca Prentice, Apoorv Srivastava

Master's Program Advisor

Blanca Cortes Quintero, Li-Syuan Huang, Yitong Li, Siyao Wu

Doctoral (Program)

Yitong Li, Erik Schreiner

Publications

PUBLICATIONS

- **Large-scale modeling of solar water pumps using machine learning** *APPLIED ENERGY*
Zuffinetti, G., Meunier, S., Hudelot, C., MacAllister, D., Krishan, G., Lutton, E., Bhattacharya, P., Kitanidis, P. K., MacDonald, A. M.
2026; 406
- **Photovoltaic pumping tests: A novel supervision method for photovoltaic water pumping systems.** *Heliyon*
Sahuquet, A., Meunier, S., Cherni, J. A., Charpentier, A., Vezin, T., Darga, A., Zuffinetti, G., Kitanidis, P. K., Queval, L.
2024; 10 (21): e39718
- **A method for estimating maximum safe installable power for groundwater extraction with application to Africa.** *The Science of the total environment*
Zuffinetti, G., Meunier, S., MacAllister, D. J., Kitanidis, P. K., Macdonald, A. M.
2024: 177062

- **Aquifer conditions, not irradiance determine the potential of photovoltaic energy for groundwater pumping across Africa** *COMMUNICATIONS EARTH & ENVIRONMENT*
Meunier, S., Kitanidis, P. K., Cordier, A., MacDonald, A. M.
2023; 4 (1)
- **Variational encoder geostatistical analysis (VEGAS) with an application to large scale riverine bathymetry** *ADVANCES IN WATER RESOURCES*
Forghani, M., Qian, Y., Lee, J., Farthing, M., Hesser, T., Kitanidis, P. K., Darve, E. F.
2022; 170
- **Integration of Deep Learning-Based Inversion and Upscaled Mass-Transfer Model for DNAPL Mass-Discharge Estimation and Uncertainty Assessment** *WATER RESOURCES RESEARCH*
Kang, X., Kokkinaki, A., Shi, X., Yoon, H., Lee, J., Kitanidis, P. K., Wu, J.
2022; 58 (10)
- **Hierarchical Bayesian Inversion of Global Variables and Large-Scale Spatial Fields** *WATER RESOURCES RESEARCH*
Wang, L., Kitanidis, P. K., Caers, J.
2022; 58 (5)
- **An information inequality for Bayesian analysis in imaging problems** *GEM-INTERNATIONAL JOURNAL ON GEOMATHEMATICS*
Kitanidis, P. K.
2021; 12 (1)
- **Integrating deep learning-based data assimilation and hydrogeophysical data for improved monitoring of DNAPL source zones during remediation** *JOURNAL OF HYDROLOGY*
Kang, X., Kokkinaki, A., Power, C., Kitanidis, P. K., Shi, X., Duan, L., Liu, T., Wu, J.
2021; 601
- **Application of deep learning to large scale riverine flow velocity estimation** *STOCHASTIC ENVIRONMENTAL RESEARCH AND RISK ASSESSMENT*
Forghani, M., Qian, Y., Lee, J., Farthing, M. W., Hesser, T., Kitanidis, P. K., Darve, E. F.
2021
- **Hydrogeophysical Characterization of Nonstationary DNAPL Source Zones by Integrating a Convolutional Variational Autoencoder and Ensemble Smoother** *WATER RESOURCES RESEARCH*
Kang, X., Kokkinaki, A., Kitanidis, P. K., Shi, X., Lee, J., Mo, S., Wu, J.
2021; 57 (2)
- **Deep learning technique for fast inference of large-scale riverine bathymetry** *ADVANCES IN WATER RESOURCES*
Ghorbanidehno, H., Lee, J., Farthing, M., Hesser, T., Darve, E. F., Kitanidis, P. K.
2021; 147
- **Routing algorithms as tools for integrating social distancing with emergency evacuation.** *Scientific reports*
Tsai, Y., Rastogi, C., Kitanidis, P. K., Field, C. B.
2021; 11 (1): 19623
- **Sensitivity Analysis of Photovoltaic Pumping Systems for Domestic Water Supply**
Meunier, S., Queval, L., Darga, A., Dessante, P., Marchand, C., Heinrich, M., Cherni, J. A., de la Fresnaye, E. A., Vido, L., Multon, B., Kitanidis, P. K.
IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC.2020: 6734–43
- **Improved Characterization of DNAPL Source Zones via Sequential Hydrogeophysical Inversion of Hydraulic-Head, Self-Potential and Partitioning Tracer Data** *WATER RESOURCES RESEARCH*
Kang, X., Kokkinaki, A., Kitanidis, P. K., Shi, X., Revil, A., Lee, J., Ahmed, A., Wu, J.
2020; 56 (8)
- **Borehole water level model for photovoltaic water pumping systems** *APPLIED ENERGY*
Vezin, T., Meunier, S., Queval, L., Cherni, J. A., Vido, L., Darga, A., Dessante, P., Kitanidis, P. K., Marchand, C.
2020; 258
- **Aquifer Imaging with Oscillatory Hydraulic Tomography: Application at the Field Scale.** *Ground water*
Cardiff, M., Zhou, Y., Barrash, W., Kitanidis, P. K.

2019

- **A validated model of a photovoltaic water pumping system for off-grid rural communities** *APPLIED ENERGY*
Meunier, S., Heinrich, M., Queval, L., Cherni, J. A., Vido, L., Darga, A., Dessante, P., Multon, B., Kitanidis, P. K., Marchand, C.
2019; 241: 580–91
- **Novel Data Assimilation Algorithm for Nearshore Bathymetry** *JOURNAL OF ATMOSPHERIC AND OCEANIC TECHNOLOGY*
Ghorbanidehno, H., Lee, J., Farthing, M., Hesser, T., Kitanidis, P. K., Darve, E. F.
2019; 36 (4): 699–715
- **Effect of irradiance data on the optimal sizing of photovoltaic water pumping systems**
Meunier, S., Queval, L., Heinrich, M., de la Fresnaye, E. A., Cherni, J. A., Vido, L., Darga, A., Dessante, P., Multon, B., Kitanidis, P. K., Marchand, C.,
IEEE
IEEE.2019: 653–58
- **Modelling and Optimal Sizing of Photovoltaic Water Pumping Systems - Sensitivity Analysis**
Meunier, S., Queval, L., Darga, A., Dessante, P., Marchand, C., Heinrich, M., Cherni, J. A., de la Fresnaye, E. A., Vido, L., Multon, B., Kitanidis, P. K.,
IEEE
IEEE.2019
- **Fast Large-Scale Joint Inversion for Deep Aquifer Characterization Using Pressure and Heat Tracer Measurements**
Lee, J., Kokkinaki, A., Kitanidis, P. K.
SPRINGER.2018: 533–43
- **Longitudinal dispersion coefficients for numerical modeling of groundwater solute transport in heterogeneous formations.** *Journal of contaminant hydrology*
Lee, J., Rolle, M., Kitanidis, P. K.
2018; 212: 41–54
- **Riverine Bathymetry Imaging With Indirect Observations** *WATER RESOURCES RESEARCH*
Lee, J., Ghorbanidehno, H., Farthing, M. W., Hesser, T. J., Darve, E. F., Kitanidis, P. K.
2018; 54 (5): 3704–27
- **Optimal estimation and scheduling in aquifer management using the rapid feedback control method** *ADVANCES IN WATER RESOURCES*
Ghorbanidehno, H., Kokkinaki, A., Kitanidis, P. K., Darve, E.
2017; 110: 310–18
- **Smoothing-based compressed state Kalman filter for joint state-parameter estimation: Applications in reservoir characterization and CO2 storage monitoring** *WATER RESOURCES RESEARCH*
Li, Y. J., Kokkinaki, A., Darve, E. F., Kitanidis, P. K.
2017; 53 (8): 7190–7207
- **Teaching and communicating dispersion in hydrogeology, with emphasis on the applicability of the Fickian model** *ADVANCES IN WATER RESOURCES*
Kitanidis, P. K.
2017; 106: 11–23
- **Improved characterization of heterogeneous permeability in saline aquifers from transient pressure data during freshwater injection** *WATER RESOURCES RESEARCH*
Kang, P. K., Lee, J., Fu, X., Lee, S., Kitanidis, P. K., Juanes, R.
2017; 53 (5): 4444–58
- **Trace organic chemical attenuation during managed aquifer recharge: Insights from a variably saturated 2D tank experiment** *JOURNAL OF HYDROLOGY*
Regnery, J., Lee, J., Drumheller, Z. W., Drewes, J. E., Illangasekare, T. H., Kitanidis, P. K., McCray, J. E., Smits, K. M.
2017; 548: 641–51
- **Optimal Decision Making Algorithm for Managed Aquifer Recharge and Recovery Operation Using Near Real-Time Data: Benchtop Scale Laboratory Demonstration** *GROUND WATER MONITORING AND REMEDIATION*
Drumheller, Z., Smits, K. M., Illangasekare, T. H., Regnery, J., Lee, J., Kitanidis, P. K.
2017; 37 (1): 27-41

- **MULTIPRECONDITIONED GMRES FOR SHIFTED SYSTEMS** *SIAM JOURNAL ON SCIENTIFIC COMPUTING*
Bakhos, T., Kitanidis, P. K., Ladenheim, S., Saibaba, A. K., Szyld, D. B.
2017; 39 (5): S222–S247
- **Scalable subsurface inverse modeling of huge data sets with an application to tracer concentration breakthrough data from magnetic resonance imaging** *WATER RESOURCES RESEARCH*
Lee, J., Yoon, H., Kitanidis, P. K., Werth, C. J., Valocchi, A. J.
2016; 52 (7): 5213-5231
- **Randomized algorithms for generalized Hermitian eigenvalue problems with application to computing Karhunen-Loeve expansion** *NUMERICAL LINEAR ALGEBRA WITH APPLICATIONS*
Saibaba, A. K., Lee, J., Kitanidis, P. K.
2016; 23 (2): 314-339
- **Hydraulic Tomography: Continuity and Discontinuity of High-K and Low-K Zones** *GROUNDWATER*
Hochstetler, D. L., Barrash, W., Leven, C., Cardiff, M., Chidichimo, F., Kitanidis, P. K.
2016; 54 (2): 171-185
- **Hydraulic Tomography: Continuity and Discontinuity of High-K and Low-K Zones.** *Ground water*
Hochstetler, D. L., Barrash, W., Leven, C., Cardiff, M., Chidichimo, F., Kitanidis, P. K.
2016; 54 (2): 171-185
- **Imaging geochemical heterogeneities using inverse reactive transport modeling: An example relevant for characterizing arsenic mobilization and distribution** *ADVANCES IN WATER RESOURCES*
Fakhreddine, S., Lee, J., Kitanidis, P. K., Fendorf, S., Rolle, M.
2016; 88: 186-197
- **Real-time data assimilation for large-scale systems: The spectral Kalman filter** *ADVANCES IN WATER RESOURCES*
Ghorbanidehno, H., Kokkinaki, A., Li, J. Y., Darve, E., Kitanidis, P. K.
2015; 86: 260-272
- **The compressed state Kalman filter for nonlinear state estimation: Application to large-scale reservoir monitoring** *WATER RESOURCES RESEARCH*
Li, J. Y., Kokkinaki, A., Ghorbanidehno, H., Darve, E. F., Kitanidis, P. K.
2015; 51 (12): 9942-9963
- **Frequency dependent hydraulic properties estimated from oscillatory pumping tests in an unconfined aquifer** *JOURNAL OF HYDROLOGY*
Rabinovich, A., Barrash, W., Cardiff, M., Hochstetler, D. L., Bakhos, T., Dagan, G., Kitanidis, P. K.
2015; 531: 2-16
- **A fast algorithm for parabolic PDE-based inverse problems based on Laplace transforms and flexible Krylov solvers** *JOURNAL OF COMPUTATIONAL PHYSICS*
Bakhos, T., Saibaba, A. K., Kitanidis, P. K.
2015; 299: 940-954
- **Fast computation of uncertainty quantification measures in the geostatistical approach to solve inverse problems** *ADVANCES IN WATER RESOURCES*
Saibaba, A. K., Kitanidis, P. K.
2015; 82: 124-138
- **Persistent questions of heterogeneity, uncertainty, and scale in subsurface flow and transport** *WATER RESOURCES RESEARCH*
Kitanidis, P. K.
2015; 51 (8): 5888-5904
- **Compressed state Kalman filter for large systems** *ADVANCES IN WATER RESOURCES*
Kitanidis, P. K.
2015; 76: 120–26
- **Fast Kalman filter using hierarchical matrices and a low-rank perturbative approach** *INVERSE PROBLEMS*
Saibaba, A. K., Miller, E. L., Kitanidis, P. K.

2015; 31 (1)

- **Relating relative hydraulic and electrical conductivity in the unsaturated zone** *WATER RESOURCES RESEARCH*
Mawer, C., Knight, R., Kitanidis, P. K.
2015; 51 (1): 599-618
- **Effects of compound-specific dilution on transient transport and solute breakthrough: A pore-scale analysis** *ADVANCES IN WATER RESOURCES*
Rolle, M., Kitanidis, P. K.
2014; 71: 186-199
- **Principal Component Geostatistical Approach for large-dimensional inverse problems** *WATER RESOURCES RESEARCH*
Kitanidis, P. K., Lee, J.
2014; 50 (7): 5428-5443
- **Principal Component Geostatistical Approach for large-dimensional inverse problems.** *Water resources research*
Kitanidis, P. K., Lee, J.
2014; 50 (7): 5428-5443
- **Large-scale hydraulic tomography and joint inversion of head and tracer data using the Principal Component Geostatistical Approach (PCGA)** *WATER RESOURCES RESEARCH*
Lee, J., Kitanidis, P. K.
2014; 50 (7): 5410-5427
- **A Kalman filter powered by H-2-matrices for quasi-continuous data assimilation problems** *WATER RESOURCES RESEARCH*
Li, J. Y., Ambikasaran, S., Darve, E. F., Kitanidis, P. K.
2014; 50 (5): 3734-3749
- **Stochastic modeling of short-term exposure close to an air pollution source in a naturally ventilated room: An autocorrelated random walk method** *JOURNAL OF EXPOSURE SCIENCE AND ENVIRONMENTAL EPIDEMIOLOGY*
Cheng, K., Acevedo-Bolton, V., Jiang, R., Klepeis, N. E., Ott, W. R., Kitanidis, P. K., Hildemann, L. M.
2014; 24 (3): 311-318
- **Estimating temporal changes in hydraulic head using InSAR data in the San Luis Valley, Colorado** *WATER RESOURCES RESEARCH*
Reeves, J. A., Knight, R., Zebker, H. A., Kitanidis, P. K., Schreueder, W. A.
2014; 50 (5): 4459-4473
- **Data processing for oscillatory pumping tests** *JOURNAL OF HYDROLOGY*
Bakhos, T., Cardiff, M., Barrash, W., Kitanidis, P. K.
2014; 511: 310-319
- **Long-term mass transfer and mixing-controlled reactions of a DNAPL plume from persistent residuals.** *Journal of contaminant hydrology*
Liu, Y., Illangasekare, T. H., Kitanidis, P. K.
2014; 157: 11-24
- **Fast iterative implementation of large-scale nonlinear geostatistical inverse modeling** *WATER RESOURCES RESEARCH*
Liu, X., Zhou, Q., Kitanidis, P. K., Birkholzer, J. T.
2014; 50 (1): 198-207
- **Large-scale stochastic linear inversion using hierarchical matrices** *COMPUTATIONAL GEOSCIENCES*
Ambikasaran, S., Li, J. Y., Kitanidis, P. K., Darve, E.
2013; 17 (6): 913-927
- **A mathematical and computational study of the dispersivity tensor in anisotropic porous media** *ADVANCES IN WATER RESOURCES*
Liu, Y., Kitanidis, P. K.
2013; 62: 303-316
- **Surge block method for controlling well clogging and sampling sediment during bioremediation.** *Water research*
Wu, W., Watson, D. B., Luo, J., Carley, J., Mehlhorn, T., Kitanidis, P. K., Jardine, P. M., Criddle, C. S.
2013; 47 (17): 6566-6573

- **Hydraulic conductivity imaging from 3-D transient hydraulic tomography at several pumping/observation densities** *WATER RESOURCES RESEARCH*
Cardiff, M., Barrash, W., Kitanidis, P. K.
2013; 49 (11): 7311-7326
- **Bayesian inversion with total variation prior for discrete geologic structure identification** *WATER RESOURCES RESEARCH*
Lee, J., Kitanidis, P. K.
2013; 49 (11): 7658-7669
- **On the importance of diffusion and compound-specific mixing for groundwater transport: An investigation from pore to field scale.** *Journal of contaminant hydrology*
Rolle, M., Chiogna, G., Hochstetler, D. L., Kitanidis, P. K.
2013; 153: 51-68
- **Aquifer heterogeneity characterization with oscillatory pumping: Sensitivity analysis and imaging potential** *WATER RESOURCES RESEARCH*
Cardiff, M., Bakhos, T., Kitanidis, P. K., Barrash, W.
2013; 49 (9): 5395-5410
- **Stochastic cost optimization of DNAPL remediation - Field application** *ENVIRONMENTAL MODELLING & SOFTWARE*
Kim, U., Parker, J., Kitanidis, P., Cardiff, M., Liu, X., Gillie, J.
2013; 46: 12-20
- **Integration of Artificial Recharge and Recovery Systems for Impaired Water Sources in Urban Settings: Overcoming Current Limitations and Engineering Challenges** *ENVIRONMENTAL ENGINEERING SCIENCE*
Regnery, J., Lee, J., Kitanidis, P., Illangasekare, T., Sharp, J. O., Drewes, J. E.
2013; 30 (8): 409-420
- **Use of on-site bioreactors to estimate the biotransformation rate of N-ethyl perfluorooctane sulfonamidoethanol (N-EtFOSE) during activated sludge treatment.** *Chemosphere*
Rhoads, K. R., Rostkowski, K. H., Kitanidis, P. K., Criddle, C. S.
2013; 92 (6): 702-707
- **Effects of compound-specific transverse mixing on steady-state reactive plumes: Insights from pore-scale simulations and Darcy-scale experiments** *ADVANCES IN WATER RESOURCES*
Hochstetler, D. L., Rolle, M., Chiogna, G., Haberer, C. M., Grathwohl, P., Kitanidis, P. K.
2013; 54: 1-10
- **Electrical Resistivity for Characterization and Infiltration Monitoring beneath a Managed Aquifer Recharge Pond** *VADOSE ZONE JOURNAL*
Mawer, C., Kitanidis, P., Pidlisecky, A., Knight, R.
2013; 12 (1)
- **The behavior of effective rate constants for bimolecular reactions in an asymptotic transport regime** *JOURNAL OF CONTAMINANT HYDROLOGY*
Hochstetler, D. L., Kitanidis, P. K.
2013; 144 (1): 88-98
- **Fast Algorithms for Bayesian Inversion** *Computational Challenges in the Geosciences*
Ambikasaran, S., Saibaba, A. K., Darve, E. F., Kitanidis, Peter, K.
2013; 156: 101-142
- **A FLEXIBLE KRYLOV SOLVER FOR SHIFTED SYSTEMS WITH APPLICATION TO OSCILLATORY HYDRAULIC TOMOGRAPHY** *SIAM JOURNAL ON SCIENTIFIC COMPUTING*
Saibaba, A. K., Bakhos, T., Kitanidis, P. K.
2013; 35 (6): A3001-A3023
- **Stochastic cost optimization of DNAPL remediation - Method description and sensitivity study** *ENVIRONMENTAL MODELLING & SOFTWARE*
Parker, J., Kim, U., Kitanidis, P., Cardiff, M., Liu, X., Beyke, G.
2012; 38: 74-88

- **Applicability of the Dual-Domain Model to Nonaggregated Porous Media** *GROUND WATER*
Liu, Y., Kitanidis, P. K.
2012; 50 (6): 927-934
- **Mixing, entropy and reactive solute transport** *GEOPHYSICAL RESEARCH LETTERS*
Chiogna, G., Hochstetler, D. L., Bellin, A., Kitanidis, P. K., Rolle, M.
2012; 39
- **Application of Hierarchical Matrices to Linear Inverse Problems in Geostatistics** *OIL & GAS SCIENCE AND TECHNOLOGY-REVUE D IFP ENERGIES NOUVELLES*
Saibaba, A. K., Ambikasaran, S., Li, J. Y., Kitanidis, P. K., Darve, E. F.
2012; 67 (5): 857-875
- **Experimental Investigation and Pore-Scale Modeling Interpretation of Compound-Specific Transverse Dispersion in Porous Media** *TRANSPORT IN POROUS MEDIA*
Rolle, M., Hochstetler, D., Chiogna, G., Kitanidis, P. K., Grathwohl, P.
2012; 93 (3): 347-362
- **A field proof-of-concept of aquifer imaging using 3-D transient hydraulic tomography with modular, temporarily-emplaced equipment** *WATER RESOURCES RESEARCH*
Cardiff, M., Barrash, W., Kitanidis, P. K.
2012; 48
- **Efficient methods for large-scale linear inversion using a geostatistical approach** *WATER RESOURCES RESEARCH*
Saibaba, A. K., Kitanidis, P. K.
2012; 48
- **Value of Information as a Context-Specific Measure of Uncertainty in Groundwater Remediation** *WATER RESOURCES MANAGEMENT*
Liu, X., Lee, J., Kitanidis, P. K., Parker, J., Kim, U.
2012; 26 (6): 1513-1535
- **Cost Optimization of DNAPL Remediation at Dover Air Force Base Site** *GROUND WATER MONITORING AND REMEDIATION*
Lee, J., Liu, X., Kitanidis, P. K., Kim, U., Parker, J., Bloom, A., Lyon, R.
2012; 32 (2): 48-56
- **Generalized priors in Bayesian inversion problems** *ADVANCES IN WATER RESOURCES*
Kitanidis, P. K.
2012; 36: 3-10
- **TRANSPORT AND MIXING DELIVERY AND MIXING IN THE SUBSURFACE: PROCESSES AND DESIGN PRINCIPLES FOR IN SITU REMEDIATION**
Kitanidis, P. K.
edited by Kitanidis, P. K., McCarty, P. L.
2012: 53-75
- **Delivery and Mixing in the Subsurface: Processes and Design Principles for In Situ Remediation INTRODUCTION DELIVERY AND MIXING IN THE SUBSURFACE: PROCESSES AND DESIGN PRINCIPLES FOR IN SITU REMEDIATION**
Kitanidis, P. K., McCarty, P. L.
edited by Kitanidis, P. K., McCarty, P. L.
2012: 1-6
- **Estimating Reaction Rate Coefficients Within a Travel-Time Modeling Framework** *GROUND WATER*
Gong, R., Lu, C., Wu, W., Cheng, H., Gu, B., Watson, D., Jardine, P. M., Brooks, S. C., Criddle, C. S., Kitanidis, P. K., Luo, J.
2011; 49 (2): 209-218
- **Increasing Confidence in Mass Discharge Estimates Using Geostatistical Methods** *GROUND WATER*
Cai, Z., Wilson, R. D., Cardiff, M. A., Kitanidis, P. K.
2011; 49 (2): 197-208
- **Large-scale inverse modeling with an application in hydraulic tomography** *WATER RESOURCES RESEARCH*

- Liu, X., Kitanidis, P. K.
2011; 47
- **Effects of model formulation and calibration data on uncertainty in dense nonaqueous phase liquids source dissolution predictions** *WATER RESOURCES RESEARCH*
Parker, J. C., Kim, U., Widdowson, M., Kitanidis, P., Gentry, R.
2010; 46
 - **Assessment of the Effectiveness of a Constructed Compound Channel River Restoration Project on an Incised Stream** *JOURNAL OF HYDRAULIC ENGINEERING-ASCE*
MacWilliams, M. L., Tompkins, M. R., Street, R. L., Kondolf, G. M., Kitanidis, P. K.
2010; 136 (12): 1042-1052
 - **Fitting Data Under Omnidirectional Noise: A Probabilistic Method for Inferring Petrophysical and Hydrologic Relations** *MATHEMATICAL GEOSCIENCES*
Cardiff, M., Kitanidis, P. K.
2010; 42 (8): 877-909
 - **Parameter estimation in nonlinear environmental problems** *STOCHASTIC ENVIRONMENTAL RESEARCH AND RISK ASSESSMENT*
Liu, X., Cardiff, M. A., Kitanidis, P. K.
2010; 24 (7): 1003-1022
 - **Significant Association between Sulfate-Reducing Bacteria and Uranium-Reducing Microbial Communities as Revealed by a Combined Massively Parallel Sequencing-Indicator Species Approach** *APPLIED AND ENVIRONMENTAL MICROBIOLOGY*
Cardenas, E., Wu, W., Leigh, M. B., Carley, J., Carroll, S., Gentry, T., Luo, J., Watson, D., Gu, B., Ginder-Vogel, M., Kitanidis, P. K., Jardine, P. M., Zhou, et al
2010; 76 (20): 6778-6786
 - **Estimating kinetic mass transfer by resting-period measurements in flow-interruption tracer tests** *JOURNAL OF CONTAMINANT HYDROLOGY*
Gong, R., Lu, C., Wu, W., Cheng, H., Gu, B., Watson, D. B., Criddle, C. S., Kitanidis, P. K., Brooks, S. C., Jardine, P. M., Luo, J.
2010; 117 (1-4): 37-45
 - **Effects of Nitrate on the Stability of Uranium in a Bioreduced Region of the Subsurface** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Wu, W., Carley, J., Green, S. J., Luo, J., Kelly, S. D., Van Nostrand, J., Lowe, K., Mehlhorn, T., Carroll, S., Boonchayanant, B., Loeffler, F. E., Watson, D., Kemner, et al
2010; 44 (13): 5104-5111
 - **Stochastic Cost Optimization of Multistrategy DNAPL Site Remediation** *GROUND WATER MONITORING AND REMEDIATION*
Parker, J., Kim, U., Kitanidis, P. K., Cardiff, M., Liu, X.
2010; 30 (3): 65-78
 - **Cost optimization of DNAPL source and plume remediation under uncertainty using a semi-analytic model** *JOURNAL OF CONTAMINANT HYDROLOGY*
Cardiff, M., Liu, X., Kitanidis, P. K., Parker, J., Kim, U.
2010; 113 (1-4): 25-43
 - **Effects of kinetic mass transfer and transient flow conditions on widening mixing zones in coastal aquifers** *WATER RESOURCES RESEARCH*
Lu, C., Kitanidis, P. K., Luo, J.
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