

# 73 Prof. Hongbin Zhan



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## Education

Ph.D. Hydrology & Hydrogeology, University of Nevada, Reno, NV, U.S.A., 1996

M.S. Physics, University of Nevada, Reno, NV, U.S.A., 1993

B.S. Physics, University of Science & Technology of China, China, 1989

## Work Experience

2001-2002 Big 12 Faculty Fellowship, Texas A&M University;

1999-2000 Montague Scholar, Center for Teaching Excellence, Texas A&M University

## Research Interests

Groundwater hydrology, flow and transport in geological formations

## Services & Awards

### Awards

1. 2013 Best Paper Award, Journal of Hydrologic Engineering, The American Society of Civil Engineers (the single paper won this award in 2013);
  2. 2011 Best Paper Award, Journal of Hydraulic Engineering (in Chinese), Chinese Hydraulic Engineering Society (one of the three papers won this award in 2011);
  3. 2010-2017 Distinguished Endowed Chang-Jiang Scholar, Ministry of Education (MOE), China;
  4. 2010 Endowed Ray C. Fish Professor in Geology, Texas A&M University;
  5. 2009 Dean's Distinguished Achievement Award in Faculty Teaching;
  6. 2006 Fellow of Geological Society of America;
  7. 2004 Distinguished Oversea Young Scientist Award, National Science Foundation of China (2005-2007);
  8. 2002 Fred Burggraf Award, Transportation Research Board (TRB), The National Academics;
- GUEST PROFESSORSHIPS

## Committee Responsibilities and Professional Activities

Sustainable Coastal Margins Program (SCMP), Geochemical & Environmental Research Group (GERG)

## Major Publications

Wang, Q., Zhan, H., Characteristic and role of groundwater in critical zone, in Principles and Dynamics of the Critical Zone, edited by Rick Giardino and Chris Houser, Elsevier, Developments in Earth Surface Processes, 19, 295-318, 2015.

Wang, Q., Zhan, H., Wang, Y., Non-Darcian effect on slug test in a leaky confined aquifer, Journal

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- Mao, X., Wang, Y., Zhan, H., Feng, L., Geochemical and isotopic characteristics of geothermal springs hosted by deep-seated faults in Dongguan Basin, Southern China, *Journal of Geochemical Exploration*, 158, 112-121, 2015.
- Qian, J., Zhan, H., Zhang, Y., Sun, P., Liu, Y., Numerical simulation and experimental study of bimolecular reactive transport in porous media, *Transport in Porous Media*, 109, 727-746, 2015.
- Zhuang, C., Zhou, Z., Zhan, H., Li, Z., Dou, Z., Wang, G., A new type curve method for estimating aquitard hydraulic parameters in a multi-layered aquifer system, *Journal of Hydrology*, in press, 2015.
- Zhang, S., Tang, H., Zhan, H., Lei, G., Cheng H., Investigation of scale effect of numerical unconfined compression strengths of virtual colluvial-deluvial soil-rock mixture, *International Journal of Rock Mechanics & Mining Sciences*, 77, 208-219, 2015.
- Feng, Q., and Zhan, H., On the aquitard-aquifer interface flow and the drawdown sensitivity with a partially penetrating pumping well in an anisotropic leaky confined aquifer. *Journal of Hydrology*, 521, 74-83, 2015.
- Wang, Q., Zhan, H., Tang, Z., Two-dimensional flow response to tidal fluctuation in a heterogeneous aquifer-aquitard system, *Hydrological Processes*, 29(6), 927-935, 2015.
- Wang, Q., Zhan, H., On different numerical inverse Laplace methods for solute transport problems. *Advances in Water Resources*, 75, 80-92, 2015.
- Wen, Z., Liu, K., Zhan, H., Non-Darcian flow toward a large-diameter partially penetrating well in a confined aquifer. *Environmental Earth Sciences*, 72(11), 4617-4625, 2014.
- Kong, S., Wang, Y., Zhan, H., Yuan, S., Hu, Q., Adsorption mechanism of humic acid on Cu/Fe bimetallic particles and its influence on the reduction of nitrobenzene in groundwater. *Water, Air, & Soil Pollution*, 225:1985, 2014.
- Wang, Q., Zhan, H., Tang, Z., A new package in MODFLOW to simulate groundwater flow in unconfined sloping aquifers, *Ground Water*, 52(6), 924-935, 2014.
- Wang, Q., Zhan, H., Tang, Z., Forchheimer flow to a well considering time-dependent critical radius, *Hydrology and Earth System Sciences*, 18, 2437-2448, 2014.
- Wang, J., Huang, G., Zhan, H., Mohanty B.P., Zheng, J., Huang, Q.Z., Xu, X. Evaluation of soil water dynamics and crop yield under furrow irrigation with a two-dimensional flow and crop growth coupled model, *Agricultural Water Management*, 141, 10-22, 2014.
- Li, S., Zhan, H., Lai, Y., Sun, Z., Pei, W., The coupled moisture-heat process of permafrost around a thermokarst pond in Qinghai-Tibet Plateau under global warming, *Journal of Geophysical Research: Earth Surface*, 119(4), 836-853, 2014.
- Qian, J., Zhou, X., Zhan, H., Dong, H., Ma, L., Numerical simulation and evaluation of groundwater resources in a fractured chalk aquifer: A case study in Zinder field, Niger, *Environmental Earth Sciences*, 72, 3053-3065, 2014.
- Ma, C., Hu, B., Zhan, H., Jiang, H., Study on landslide stability based on creep strength reduction technique, *Metal Mine*, 11, 50-53, 2014.
- Wen, Z., Jin, Z., Jin, M., Zhan, H., Numerical modeling of Forchheimer flow to a pumping well in a confined aquifer using strong-form mesh-free method, *Hydrogeology Journal*, 22 (5), 1207-1215, 2014.
- Kong, S., Wang, Y., Zhan, H., Liu, M., Liang, L., Hu, Q., Competitive adsorption of humic acid

- and arsenate on nanoscale iron-manganese binary oxides-loaded zeolite in groundwater, *Journal of Geochemical Exploration*, 144, part B, 220-225, 2014.
- Kong, S., Wang, Y., Zhan, H., Yuan, S., Yu, M., Liu, M., Adsorption/oxidation of arsenic in groundwater by nanoscale Fe-Mn binary oxides loaded on zeolite, *Water Environment Research*, 86(2), 147-155, 2014.
- Huang, S., Liu, C., Wang, Y., Zhan, H., Multivariate analysis of the heterogeneous geochemical processes controlling arsenic enrichment in a shallow groundwater system, *Journal of Environmental Science and Health, Part A*, 49, 478-489, 2014.
- Kong, S., Wang, Y., Zhan, H., Yuan, S., Liu, M., Zhou, C., Arsenite and arsenate removal from contaminated groundwater by nanoscale iron-manganese binary oxides: Column studies, *Environmental Engineering Science*, 30(11), 689-696, 2013.
- Lin, D., Jin, M., Liang, X., Zhan, H., Estimating groundwater recharge beneath irrigated farmland using environmental tracers fluoride, chloride and sulfate, *Hydrogeology Journal*, 21, 1469-1480, 2013.
- Zhang, E., Wang, Y., Qian, Y., Ma, T., Zhang, D., Zhan, H., Zhang, Z., Fei, Y., Wang, S., Iodine in groundwater of the North China Plain: Spatial patterns and hydrogeochemical processes of enrichment, *Journal of Geochemical Exploration*, 135, 40-53, 2013.
- Wang, Q., Zhan, H., Radial reactive solute transport in an aquifer-aquitard system, *Advances in Water Resources*, 61, 51-61, 2013.
- Wang, Q., Zhan, H., Tang, Z., A new parameter estimation method for solute transport in a column, *Ground Water*, 51(5), 714-722, 2013.
- Wang, Q., Zhan, H., Tang, Z., Groundwater response to dual tidal fluctuations in a peninsula or an elongated island, *International Journal for Numerical and Analytical Methods in Geomechanics*, 37(15), 2456-2470, 2013.
- Rezaei, A., Zhan, H., Zare, M., Impact of thin aquitards on two-dimensional solute transport in an aquifer, *Journal of Contaminant Hydrology*, 152, 117-136, 2013.
- Gao, G., Fu, B., Zhan, H., Ma, Y., Contaminant transport in soil with depth-dependent reaction coefficients and time-dependent boundary conditions, *Water Research*, 47(7), 2507-2522, 2013.
- You, K., Zhan, H., New solutions for solute transport in a finite column with distance-dependent dispersivities and time-dependent solute sources, *Journal of Hydrology*, 487, 87-97, 2013.
- You, K., Zhan, H., Comparison of diffusive and advective fluxes of gas phase volatile organic compounds (VOCs) in unsaturated zones under natural conditions, *Advances in Water Resources*, 52, 221-231, 2013.
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- Xu, X., Huang, G., Zhan, H., Qu, Z., Huang, Q., Integration of SWAP and MODFLOW-2000 for modeling groundwater dynamics in shallow water table areas, *Journal of Hydrology*, 412-413, 170-181, 2012.
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- Li, J., Zhan, H., Huang, G., You, K., Tide-induced airflow in a two-layered coastal land with atmospheric pressure fluctuations, *Advances in Water Resources*, 34, 649-658, 2011.
- You, K., Zhan, H., Li, J., Gas flow to a barometric pumping well in a multilayered unsaturated zone, *Water Resources Research*, 47, W05522, 2011.
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- Qian, J., Zhan, H., Chen, Z., Ye, H., Experimental study of solute transport under non-Darcian flow condition in a single fracture, *Journal of Hydrology*, 399, 246-254, 2011.
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- Wen, Z., Huang, G., Zhan, H., Solution for non-Darcian flow to an extended well in fractured rock, *Ground Water*, 49(2), 280-285, 2011.
- Qian, J., Chen, C., Zhan, H., Luo, S., Solute transport in a filled single fracture under non-Darcian flow, *International Journal of Rock Mechanics & Mining Sciences*, 48, 132-140, 2011.