

## CURRICULUM VITAE - JAN W HOPMANS

Department of Land, Air and Water Resources, Hydrology Program  
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### RESEARCH INTERESTS:

**Vadose Zone Hydrology:** soil physics, flow and transport modeling, soil moisture, microtomography, scaling techniques, plant root-soil water interactions, parameter optimization, soil hydraulic properties, climate change impacts, irrigation water management, soil moisture sensor development, soil salinity, forest hydrology.

### EDUCATION:

- Ph.D.** 1985 Auburn University, Soil Physics (Advisor: J.H. Dane)
- M.S.** 1981 Wageningen Agricultural University, Hydrology/Hydraulics  
(Advisor: Krayenhoff van den Leur)
- B.S.** 1978 Wageningen Agricultural University, Land and Water Use

**PERSONAL:** Born July 19, 1953, Married, four children.

### PROFESSIONAL EXPERIENCE:

- 2008 - 2010 Visiting Professor of Wenzhou Medical College, Wenzhou, P.R. China
- 1996 - Professor, Hydrology Program, Department of Land, Air and Water Resources, University of California, Davis, CA.
- 1992-1996 Associate Professor, Hydrology Program, Department of Land, Air and Water Resources, University of California, Davis, CA.
- 1988-1992 Assistant Professor, Department of Land, Air and Water Resources, University of California, Davis, CA.
- 1985-1988 Post-Doctoral Assistant, Department of Hydrology, Wageningen Agricultural University, the Netherlands.
- 1981-1985 Graduate Research Assistant, Department Agronomy and Soils, Auburn University, Auburn, AL.

### UNIVERSITY SERVICE:

- 2018 – current Distinguished Professor Emeritus
- 2015 - 2018 Associate Dean International Program, College of Agricultural and Environmental Sciences
- 2016 – 2017 Interim Director, UC Davis World Food Center
- 2015-2016 Associate Vice Provost Global Affairs, Office of the Provost, UC Davis
- 2009-2015 Associate Dean, College of Agricultural and Environmental Sciences
- 2005- 2009 Chair, Department Land, Air and Water Resources (LAWR)
- 2001- 2005 Vice Chair, Hydrology of Dept LAW
- 1997- 2001 Graduate and Admit Advisor, Hydrologic Sciences Graduate Group

- 1994-1996 Director Hydrology Program, Department of Land, Air and Water Resources, University of California, Davis, CA.
- 1997-1998 Member, College of Agricultural and Environmental Sciences Executive Committee
- 1997- 2000 Member Representative Assembly of Academic Senate
- 1997&1998 Chair Search Committee Watershed Hydrologist UC Davis

#### **HONORS AND AWARDS:**

**Honorary Professor**, China Agricultural University, 2019; **Yandang Friendship Award**, Wenzhou, China, 2017; **Nancy Roma Paech Visiting Professorship** in Agriculture, University of Sydney, 2017; **Fellow** American Association of the Advancement of Science, AAAS, 2015; **Fellow** Soil Science Society of America, 2001; **Fellow American Geophysical Union**, 2005; **Don and Betty Kirkham Soil Physics Award**, 2003; **Visiting Research Scientist**: Wageningen Agricultural University, July-December 1993; **Fullbright Grant**, 1985; **Who's Who in Science and Engineering**, 1992-94; **Fellow LWRDC and CSIRO**, Townsville, Australia, 2000; **2001 Editors' Citation** for Excellence in Refereeing for Water Resources Research, 2002

#### **PROFESSIONAL ACTIVITIES:**

**Incoming President-Elect, President-Elect, President and Past President** Soil Science Society of America, 2012-16. Vice Chair and Chair of ACSESS (Alliance of Crop, Soil, and Environmental Science Societies), 2014-16; AAAS – Representative for SSSA.

**Boards:** Chair Board SSSA (2014), Chair Board ACSESS (2015), Member Board I-House, Davis (2015- )

**Chair of Division S-1 (Soil Physics)** of Soil Science Society of America, 2000

**Chair and Member S-1 Early-Career Award Committee**, 2001-2004

**Chair Kirkham Conferences Committee**, 2006-2010; **Session Chair** Gordon Conference, Vadose zone and multiphase transport, 1998; Gordon Conference Fluid Flow in Porous Media, 2004; **Co-Chair**, Vadose Zone Hydrology Conference, University of California, Davis, 1995;

**Chair** Working Group SP (International Union of Soil Sciences) Soil and Groundwater Pollution, 1998- 2004; **Member Session Organizer and Chair** SSSA Meetings, 1988, 1990, 1991,1992; 2002, 2004, 2005; AGU Meetings, 1994, 1997, 1998 (2), 2005, 2007; Don Nielsen Symposium, SSSA, 2001; IUSS Special Symposium, Bangkok, 2002; Joint EGS-AGU Meeting, Nice, France, 2003 (2 sessions) and 2004; **Scientific Planning Committee Member**: 2014 Salinity Forum, Riverside, CA; 2013 Soil and Plant Meeting, Naples, Italy; 2013 Ascona (Switzerland) Soil Science and Critical Zone Processes; UC Davis International Climate Smart Agriculture International Conference; 2012 Kirkham Conference, New Zealand; 2012: Hydropedology Conference, Leipzig, Germany; 2009 Conference on 'Preferential and Unstable Flows in Porous Media, Monte Verita, Switzerland; 2000 & 2004 Kirkham Conference; 2002 InterAmericas Symposium CODATA, Montreal; 2004 Future of World Water Symposium, Davis; 2004 Gordon Conference on 'Flow & Transport in Porous Media'; 2002 Ascona (Switzerland) Workshop on 'Rhizosphere, preferential flow and bioavailability ; 2008 Ascona (Switzerland) Conference on 'Preferential and unstable flows in porous media-from water infiltration to gas injection;

**Editor-in-Chief** Vadose Zone Journal: 2006-2010; **Consulting Editor** Vadose Zone Journal: 2010-; **Guest Editor**: J. of Hydrology Issue on ' Soil Physical Properties and Processes and

Their Variability in Space and Time’, 22 papers, 2002; Advances in Water Resources Issue on ‘Experimental Hydrology’, 2004; Vadose Zone Journal Issue on ‘Landscape processes’, 2005; Vadose Zone Journal on ‘Soil Bio Physics’;

**Associate Editor/Editorial Board**, Soil Science Society of America Journal, 1993-1996; Advances in Water Resources, 1996-2001 ; International Agrophysics, 2000-2011 ; Turkish Journal of Agriculture and Forestry, 2000- 2011, Vadose Zone Journal, 2001-2011 ; Soil Science Reviews, 2002-03; Plant and Soil, 2004-07 ; Journal of Hydrology, 2005 - 07 .

**Reviewer:** Soil Science Society of America Journal, Agronomy Journal, Water Resources Research, J. Hydrology, Soil Science, J. Env. Quality, Trans. ASAE, J. ASCE, Plant and Soil, USDA, BARD, Water Resources Center, and many other journals.

**Liaison** of Soil Science Society of America for AGU. 1995- 2002; **Member** Hydrology Section AGU Fellows Committee, 2008-11; **Member**, AGU Union Fellow Committee, 2013-15; AGU Large-scale experimentation Committee, 1994-98; AGU Fellows Committee, 2008-2011, and Vadose Zone Hydrology Committee, 1994-2005 ; USNR-NAS-CODATA, 2001-2004; **Working Group Member Instrumentation Committee**, National Center for Hydrologic Synthesis (NCHS), 2005-08; **CUASHI Education and Outreach Committee:** Member 2007, and 2009-2014 CUASHI Standing Committee on Observations; **Advisory Committee Member:** International Conference - Remade Lands 2000 (Australia); International Research Advisory Council of Alberta Water Research Institute: 2006-2008; UC Climate Change Editorial Advisory Group: 2009-11; **Panel member**, USDA Water Resources Assessment and Protection Program, 1993; NSF Hydrology, 2007; **Secretary/Chair**, Western-188 USDA Regional Project, 1991-1992; **Consulting member**, Research Project of Inter. Atomic Energy Agency, 1991-93; **Founder**, International Study Group on Inverse Modeling (ISGIM), 1993; **Review Panel Member:** Review Environmental Studies, Griffith University, Brisbane, Australia, 1993; EMBRAPA Center of Environmental Studies Program, Jaguariuna, Brazil, 1996; Quality Assurance Netherlands Universities (QANU), Review Committee of Earth Science Education Programs in Netherlands, 2006 and 2012; Department of Environmental Sciences, ETH, Zurich, Switzerland, 2010; Soil Science Graduate Program (Chair), Oregon State University, 2015. **Technical Committee/Board**, Kearney Foundation of Soil Science, 1993-1995, 2001-2006; California Water Resources Center, 2004-07; **Expert Panel Member:** Dutch Ministry of Public Works on ‘Crop salt tolerance on agricultural crops’, 2009; G E Brown Salinity Laboratory Visioning Conference, 2005;

#### **PROFESSIONAL AFFILIATIONS (until 2016):**

American Society of Agronomy (ASA), Soil Science Society of America (SSSA), American Geophysical Union (AGU), International Union of Soil Sciences (IUSS), European Geophysical Sciences (EGS), American Association of the Advancement of Science (AAAS), Geological Society of America (GSA), Gamma Sigma Delta.

**FUNDING AGENCIES:** USDA, NSF, USGS, EPA, BARD, Kearney Foundation of Soil Science, California State Salinity Drainage Task Force, California Water Resources Center.

**Ph.D. STUDENTS** (year of graduation): Simon Eching (1993), Jiayu Chen (1996), Volker Clausnitzer (1998), Heather Shepherd (1999), Mike Tansey (1999), Atac Tuli (2001), Gerrit Schoups (2004), Tamir Kamai (2013), Maziar Kandalous (2015);

**M.S. Students** (year of graduation): Thomas Suggs (1992), Steve Essert (1995), Dale Heeraman (199.), Terry Frueh (1996), Francesca Somma (1996), Kevin Ellett (2002), Leanne Tumlinson (2005), Armen Almezian (2014)

**COURSEWORK TEACHING RESPONSIBILITY: Undergraduate:** Irrigation Water Management, Introductory Soil Physics, Science and Society: Hydrology, Environmental Monitoring; **Graduate:** Transport in Soils, Hydrologic Modeling of the Vadose Zone.

**SELECTED INVITED PRESENTATIONS:**

**2015** FAPESP, Sao Paulo, Brazil; **2014 INOVARGI** Forteleza Brazil; **EMPRAPA**, Sao Carlos, Brazil **2014;** Soil Science Conference, Rio de Janiero; Hydropedology, Leipzig, Germany; **2012** Stanford University; Penn State University; Texas A&M; **2011, EPFL** Lausanne; **ETH** Zurich; **2010**, EGS, Vienna, Austria; Goldschmidt Conference, Tennessee; UC Irvine; OSU, Oregon; **2009, Dahlia** Greidinger Water&Climate Symposium, Haifa, Israel; **2008**, International Salinity Forum, Adelaide, Australia; International Workshop on Sustainable Watershed Research, Hangzhou, China; **2007**, Pedofract, Madrid, Spain; Nelson Institute for Environmental Studies, Univ. of Wisconsin; Civil and Environmental Engineering, Duke University; **2006**, University of Lleida, Spain; **2005**, UC Riverside; AGU, New Orleans; **2004**, MIT, Boston; Amsterdam University; Wageningen University, Netherlands; OSU, Corvallis; SSSA Meeting, Seattle, Landscape Symposium; **2003**, University of Sydney; **2002**, Gordon Conference, New Hampshire.; ETHZ Workshop on Rhizosphere, preferential flow and bioavailability, Monte Verita, Switzerland; SSSA Meeting, Indianapolis, Clark Topp Symposium; **2001** SSSA Meeting, Charlotte NC, Gaylon Campbell Symposium; DNRE, Tatura, Australia; Technical University, Copenhagen, Denmark; Joint SSSA-CSSA Meeting, Prague, Czech Republic; Alterra, Wageningen, the Netherlands; AGU, San Francisco; **2000**, CSIRO Land and Water, Townsville, Australia, APSRU, Toowoomba, Australia; Joint German and American Soil Science Society, Osnabruek, Germany; **1999** Johns Hopkins University; Annual Soil Science Society of America Meeting, Salt Lake City; **1998** Montpellier-France-ISSS; Baltimore-SSSA; Napoli-Italy- ISGIM; **1997** Riverside-Symposium; San Francisco-AGU; Piracicaba-Univ. Sao Paulo-Workshop. **1995** UC-Riverside; Australia-Griffith Univ. Berkeley-Lawrence Berkeley Nat. Lab.; Australia-Flinders Univ. **1994** Lawrence Livermore National Lab; **1993** Wageningen-Netherlands-CABO; Netherlands-Wageningen Agric. Univ; Belgium-Univ. of Leuven; Switzerland-ETH; Germany-Muncheberg-ZALF and Berlin-Humbold Univ.; Czech Rep.-Prague-Tech. Univ. **1992** Utah State Univ; Univ. of Texas; Netherlands-Institute of Soil Fertility; UC-Berkeley. **1991** Netherlands-Wageningen Agric. Univ.

**PATENTS:**

1. Tuli, A., J.W. Hopmans, T. Kamai, and B.D. Shaw. 2011. In-situ soil nitrate ion concentration sensor. US Patent No. 7,927,883 B2.
2. Tuli, A., J.W. Hopmans, T. Kamai, and B.D. Shaw. 2013. In-situ soil nitrate ion concentration sensor. US Patent No. 8,444,937 B2. [Expanded Patent License](#).

## **BOOKS and SPECIAL ISSUES:**

8. Anderson, S.E., and J.W. Hopmans. 2013. Soil-Water-Root Processes: Advances in Tomography and Imaging. 2<sup>nd</sup> edition. Soil Science Society of America Special Publication 61. Madison, WI.
7. Lin, H., J.W. Hopmans, and D. B. Richter. 2011. Interdisciplinary sciences in a global network of critical zone observatories. [doi:10.2136/vzj2011.0084](https://doi.org/10.2136/vzj2011.0084). Vadose Zone Journal 6: 4 pages.
6. Alvin Smucker, and J.W. Hopmans (Guest Editors). 2007. Soil Biophysics. doi:10.2136/vzj2007.0057. Vadose Zone Journal 6: 50 pages.
5. Corwin, D.L., J.W. Hopmans, and G. de Rooij (Guest Editors). 2006. From Field- to landscape scale vadose zone processes: scale issues, modeling and monitoring. Vadose Zone Journal 5: 290 pages.
4. Hopmans, J.W. and G.Pasternack (Guest Editors). 2006. Experimental Hydrology: A bright future. Adv. In Water Resources 29: 380 pages.
3. Hopmans, J.W., P. Nkedi-Kizza, and O. Wendroth (Guest Editors). 2003. Soil hydrological properties and processes and their variability in space and time. J. of Hydrology, Volume 272, 292 pages.
2. Anderson, S. E. and J. W. Hopmans. (Editors), 1994. Tomography of soil water root processes. Special Publication Number 36, Soil Science Society of America.
1. Parlange, M.B., and J.W. Hopmans (Editors), 1999. Vadose Zone Hydrology: Cutting across disciplines, Oxford University Press.

## **JOURNAL ARTICLES:**

184. Robinson, D.A. J.W. Hopmans, V. Filipovic, M. Vanderploeg, I. Lebron, S.B. Jones, S. Reinsch, N. Jarvis, and M. Tuller. 2019. Global Environmental Changes Impact Soil Hydraulic Functions through Biophysical Feedbacks. Global Change Biology. **25(6)**: 1895-1904. <https://doi.org/10.1111/gcb.14626> .
183. A.T. O'Geen, M. Safeeq, J. Wagenbrenner, E. Stacy, P. Hartsough, S. Devine, Z. Fian, R. Ferrell, M. Goulden, J.W. Hopmans, and R. Bales, R. 2019. Southern Sierra Critical Zone Observatory and Kings River Experimental Watersheds: A Synthesis of measurements, new insights, and future directions. Vadose Zone Journal, 17:180081. Doi:10.2136/vzj2018.04.0081.
182. Kisekka, I, Maziar M. Kandelous, Blake Sanden, Jan W. Hopmans. Uncertainties in leaching assessment in micro-irrigated fields using water balance approach. 2019. Agric Water Management 213:107-115. DOI: 10.1016/j.agwat.2018.10.012.

181. Bales, R., M. Goulden, M. Conklin, A.T. O'Geen, C. Hunsaker, P. Hartsough, J.W. Hopmans, and M. Safeeq. 2018. Mechanisms controlling the impact of multi-year drought on mountain hydrology. *Nature Scientific Reports*.
180. Wolf, Kristina; Torbert, Emma; Bryant, Dennis; Burger, Martin; Denison, R.; Herrera, Israel; Hopmans, Jan,W ; Horwath, William; Kaffka, Stephen; Kong, Angela; Norris, Robert; Tomich, Thomas; Six, Johan; and Scow, Kate. 2018. The Century Experiment: The first twenty years of UC Davis' Mediterranean agroecological experiment. *Ecology*. DOI: 10.1002/ecy.2105.
179. He, R. Y. Jin, M. Kandelous, and J.W. Hopmans. 2017. Evapotranspiration over an almond orchard using Landsat satellite observations. *Remote Sensing* 9(5). DOI: 10.3390/rs9050436
178. Jerszurki, D., V., Couvreur, T. Maxwell, L. de Carvalho Ramos Silva, N. Matsumoto, K. Shackel, J. Luiz Moreti de Souza, and Jan W Hopmans. 2017. Impact of root growth and hydraulic conductance on canopy carbon-water relations of young walnut trees under drought. *Scientia Horticulturae* 226:342-352.
177. S. Baram,V. Couvreur, T. Harter, M. Read, P.H. Brown, M. Kandelous, D.R. Smart, and J.W. Hopmans. 2017. Estimating Nitrate Leaching to Groundwater from Orchards:Comparing Crop Nitrogen Excess, Deep Vadose Zone Data-Driven Estimates, and HYDRUS Modeling. *Vadose Zone J.* doi:10.2136/vzj2016.07.0061.
176. Wolff, M.W., JW Hopmans, CM Stockert, M Burger Effects of drip fertigation frequency and N-source on soil N<sub>2</sub>O production in almonds. ... - *Agriculture, Ecosystems & ...*, 2016.
175. Baram, S, V. Couvreur, T. Harter, M. Reed, P.H. Brown, J.W. Hopmans and D.R. Smart. 2016. Assessment of orchard N losses to groundwater with a vadose zone monitoring network. *Agric. Water Management* 172:83-95. <http://dx.doi.org/10.1016/j.agwat.2016.04.012> .
174. Vereecken, H. A. Schnepf, J.W. Hopmans, M. Javaux, D. OR, et al. 2016. Modeling Soil Processes: Review, Key Challenges, and New Perspectives. *Vadose Zone Journal*, doi:10.2136/vzj2015.09.0131,
173. Assouline, S., A. Tuli, and Jan W. Hopmans. 2016. Evaluating the relative air permeability of porous media from their water retention curves. *Water Resour. Res.* 52, doi:10.1002/2015WR018286.
172. Couvreur, V, M.M. Kandelous, B.L. Sanden, B.D. Lampinen, and J.W. Hopmans. 2016. Downscaling transpiration rate from field to tree scale. *Agric. And Forest Meteorology* 221: 71-77. <http://www.sciencedirect.com/science/article/pii/S0168192316301630>

171. O'Geen, A.T., M. Sal, H. Dahlke, D. Doll, R. Elkins, A. Fulton, G.E. Fogg, T. Harter, J.W. Hopmans, C. Ingels, F. Niederholzer, S. Sandoval Solis, P. Verdegaal, and M. Walkinshaw. 2015. Soil suitability index identifies potential areas for groundwater banking on agricultural lands. *Cal. Agric.* April/June 2015. Doi: 103733/ca.v069n02p75.
170. She Dongli, W. Zhang, Tim, L.C., and Hopmans, J.W. 2015. Area representative water content from limited measurements at time-stable locations or depths. *J. Hydrol.* 530:580-590.
169. M. Kandelous, B.A. Moradi and J.W. Hopmans. 2015. An alternative tensiometer design for deep vadose zone monitoring. *Soil Sci. Soc. Amer. J.* 79:1293-1296. DOI:10.2136/sssaj2015.03.0121.
168. Kamai, T., G.J. Kluitenberg, and J.W. Hopmans. 2015. A Dual-Probe Heat-Pulse Sensor with Rigid Probes for Improved Soil Water Content Measurements. *Soil Sci. Soc. Amer. J.* doi:10.1029/2015.
167. Amundson, R, Berhe, A, Hopmans, J.W., Olson, C, Szein, S.E., and D.L. Sparks. **2015** **Soil and Human Security in the 21st Century. Science.** 348 (6235), DOI:10.1126/science.1261071.
166. Shaw, B.D. , J. B. Wei, A. Tuli, J. Campbell, S. J. Parikh, S. Dabach, M. Buelow and Jan W. Hopmans. 2014. Analysis of ion and DOC interference of soil solution nitrate concentration measurements using UV absorption spectroscopy. *Vadose Zone Journal.* 13:12: doi:10.2136/vzj2014.06.0071
165. Steenwerth, K.L., A.K. Hodson, A. J. Bloom, Michael R Carter, Andrea Cattaneo, Colin Chartres, Jerry L Hatfield, Kevin Henry, Jan W. Hopmans, William R Horwath, Bryan M Jenkins, Ermias Kebreab, Rik Leemans, Leslie Lipper, Mark N Lubell, Siwa Msangi, Ravi Prabhu, Matthew P Reynolds, Samuel Sandoval Solis, William M Sischo, Michael Springborn, Pablo Tittonell, Stephen M Wheeler, Sonja J Vermeulen, E. Wollenberg, Lovell S Jarvis and Louise E Jackson. 2014. Climate-Smart Agriculture Global Research Agenda: Scientific Basis for Action. *Agriculture & Food Security.* 3:11.
164. Holbrook, W.S., C.S. Riebe, M. Elwaseif, J. L. Hayes, K. Basler-Reeder, D.L. Harry, A. Malazian, A. Dosseto, B. Jessup, P. C. Hartsough, and Jan W. Hopmans. 2014. Geophysical constraints on deep weathering and water storage potential in the Southern Sierra Critical Zone Observatory. *Earth Surf. Process. Landforms* 366-380. DOI: 10.1002/esp.3502.
163. Rings, J., T. Kamai, M. Kandelous, P. Hartsough, J. Simunek, J.A. Vrugt, and J.W. Hopmans. 2013. In: *Procedia Environmental Sciences: Four decades of progress in monitoring and modeling of processes in the soil-plant-atmosphere system: Applications and Challenges: Volume 19. Bayesian inference of tree water relations using a soil-tree-atmosphere continuum model.* (Eds. N. Romano, G.D'Urso, G. Severino, G.B. Chirico and M. Palladino). SciVerse Elseviers.

162. Otavia, R., R. Duarte Coelho, P. Ferraz Camara Monteinro, J.W. Hopmans, and B. Lennartz. 2013. Water consumption and soil moisture distribution in melon crop with mulching and in a protected environment. *Rev. VBras. Frutic, Jaboticabal – SP*, Vol 35(2):555-564.
161. Van Genuchten, M.Th. and J.W. Hopmans. 2013. *Vadose Zone Journal: A Decade of Multidisciplinary Research*. *Vadose Zone Journal*. DOI:10.2136/vzj2013.08.0150.
160. Nasta, P., N. Romano, S. Assouline, J.A. Vrugt and J. W. Hopmans. 2013. Prediction of spatial variable unsaturated hydraulic conductivity using scaled soil particle size distribution functions. *Water Resour Res.* 49:1-11. Doi:10.1002/wrcr.20255.
159. Deepagoda, Chamindu T.K.K, Moldrup P, Jensen, M.P., Jones, S.B., Wollesen de Jonge, L, Schjønning, P., Scow, K.M., Hopmans J.W., Rolston, D.E., Kawamoto, K, and Komatsu, 2012. Diffusion aspects of designing porous growth media for earth and space. *Soil Sci Soc Amer J.* 76:1564-1578. Doi:10.2136/sssaj2011.0438.
158. Hopmans, J.W. R.E. Bales, P. Hartsough, M. Meadows, A.T. O’Geen and A. Malazian. 2012. Response to ‘Comment Bales, R.C. , J.W. Hopmans, A. Toby O’Geen, M. Meadows, P. Hartsough, P. Kirchner, C. Hunsaker. 2012. Soil Moisture Response to Snowmelt and Rainfall in a Sierra Nevada mixed conifer Forest. *Vadose Zone Journal*. Doi:10.2136/vzj2012.0004r
157. Knight, J.H., Gerard J. Kluitenberg, Tamir Kamai, and Jan W. Hopmans. 2012. Semi-Analytical Solution for Dual-Probe Heat-Pulse Applications that Accounts for Probe Radius and Heat Capacity. *Vadose Zone Journal*. Doi:10.213/vzj2011.0112.
156. Kandelous M.M., T. Kamai, J.A. Vrugt, J. Simunek, B.R. Hanson, and J.W. Hopmans. 2012. Evaluation of subsurface drip irrigation design and management parameters for alfalfa. *Agric. Water Management*. Doi:10.1016/j.agwat.2012.02.009
155. Saintenoy, A and J.W. Hopmans. 2011. Ground Penetrating radar: Water table detection sensitivity to soil water retention properties. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS)*. Vol. 4(4):748-753. Doi 10.1109/JSTARS.2011.2171920
154. Beggs, R.A., D.J. Hills, G. Tchobanoglous, and J.W. Hopmans. 2011. Fate of nitrogen for subsurface drip irrigation of effluent from small wastewater systems. *Journal of Contaminant Hydrology* 126:19-28. doi:10.1016/j.jconhyd.2011.05.007
153. Jury, W.A., D. Or, Y.A. Pachepsky, H. Vereecken, J.W. Hopmans, Ahuja, L.R., B. Clothier, K. L. Bristow, G.L. Kluitenberg, P. Moldrup, J. Simunek, M.Th. van Genuchten, R.E. Horton. 2011. Kirkham’s legacy and contemporary challenges in soil physics research. *Soil Sci. Soc. Amer. J* 75:1589–1601. doi:10.2136/sssaj2011.0115



152. Moradi, A.B., A. Carminati, D. Vetterlein, Pl. Vontobel, E. Lehmann, U. Weller, J.W. Hopmans, H.J. Vogel, and S.E. Oswald. 2011. Three-dimensional visualization and quantification of water content in rhizosphere. *New Phytologist* 192:653–663. doi: 10.1111/j.1469-8137.2011.03826.x
151. Swarowsky, A., R.A. Dahlgren, K. Tate, J.W. Hopmans, and A.T. O’Geen. 2011. Catchment-scale soil water dynamics in a Mediterranean oak woodland. *Vadose Zone Journal*. *Vadose Zone Journal* 10: 786–799. doi:10.2136/vzj2011.0001.
150. Bales, R.C. , J.W. Hopmans, A. Toby O’Geen, M. Meadows, P. Hartsough, P. Kirchner, C. Hunsaker. 2011. Soil Moisture Response to Snowmelt and Rainfall in a Sierra Nevada mixed conifer Forest. *Vadose Zone Journal* 10: 786–799. doi:10.2136/vzj2011.0001.
149. Lin, H., J.W. Hopmans, and D. B. Richter. 2011. Interdisciplinary sciences in a global network of critical zone observatories. *Vadose Zone Journal*: 10:781-785. [doi:10.2136/vzj2011.0084](https://doi.org/10.2136/vzj2011.0084) .
148. Malazian, A., P. Hartsough, T. Kamai, C. S. Campbell, D.R. Cobos, and J.W. Hopmans. 2011. Evaluation of MPS-1 soil water potential sensor. *J. of Hydrol.*, [http://dx.doi.org/10.1016/j.jhydrol.2011.03.006](https://doi.org/10.1016/j.jhydrol.2011.03.006)
147. Romano N., P. Nasta, G. Severino and J.W. Hopmans. 2011. Using bimodal lognormal functions to describe soil hydraulic properties. *Soil Sci. Soc. Amer. J.* 75: doi:10.2136/sssaj2010.0084.
146. Nasta, P., S. Huynh, and J.W. Hopmans. 2011. Simplified multistep outflow method to estimate unsaturated hydraulic functions for coarse-textured soils. *Soil Sci. Soc. Amer. J.* 75(2): doi:10.2136/sssaj2010.0113
145. Letey, J., G. J Hoffman; J. W Hopmans; S. R Grattan; D. Suarez; D. L Corwin; J. D Oster; L. Wu; and C. Amrhein. 2011. Evaluation of Soil Salinity Leaching Requirement Guidelines. *Agricultural Water Management*. [Vol 98\(4\): 502-506. http://dx.doi.org/10.1016/j.agwat.2010.08.009](https://doi.org/10.1016/j.agwat.2010.08.009)
144. Sabo, J.L., T. Sinha, L.C. Bowling, G. H. W. Schoups, W.W. Wallender, M.E. Campanas, K.A. Cherkauer, P. Fuller, W.L. Graf, J.W. Hopmans, J.S. Kominoski, C. Taylor, S.W. Trimble, R. H. Webb, and E.E. Wohl. Reclaiming sustainability in the Cadillac Desert. 2010. *PNAS* 107(50):21263-270. [www.pnas.org/cgi/doi/10.1073/pnas.1009734108](https://doi.org/10.1073/pnas.1009734108). .
143. Lee J, Hopmans JW, Rolston DE, et al. 2010. [Determining soil carbon stock changes: Simple bulk density corrections fail \(vol 134, pg 251, 2009\)](https://doi.org/10.1016/j.agee.2010.04.016) *AGRICULTURE ECOSYSTEMS & ENVIRONMENT* Volume: 138 Issue: 3-4 Pages: 355-355. doi: 10.1016/j.agee.2010.04.016.

142. Kluitenberg, G.J., T. Kamai, J.A. Vrugt and J.W. Hopmans. 2010. Effect of Probe Deflection on Dual-Probe Heat-Pulse Thermal Conductivity Measurements. *Soil Sci Soc Amer J.* 74:1537 - 1540 . doi:10.2136/sssaj2010.0016N.
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