

M. LEVENT KAVVAS

Distinguished Professor at University of California, Davis, USA

Director, UCD Hydrologic Research Laboratory, and J. Amorocho Hydraulics Laboratory, Dept. of Civil & Envr. Engineering, University of California, Davis, USA

Distinguished Member and Fellow of ASCE (American Society of Civil Engineers)

Registered Professional Hydrologist

Civil & Environmental Engineering, Room 3165 Ghausi Hall, University of California, Davis

Education:

Ph.D. Civil Engineering, in the Hydraulics and Systems area; Purdue University, W. Lafayette, Indiana (as Fulbright Scholar and Purdue University Victor O'Schaunessy Fellow)

M.S. Civil Engineering, in the Hydrology and Water Resources Program, Colorado State University, Ft. Collins, Colorado (as Fulbright Scholar)

Awards and Honors:

2019 ASCE Distinguished Member Medal

2016 Croess Medal from ASCE

2016 Best Paper award from ASCE JHE

2015 International Award from The Japan Society of Hydrology and Water Resources

The Advisory Committee Climate Services Award from CA DWR, November, 2014

Distinguished Professor, University of California, Davis, July 2014 -

Gerald and Lillian Orlob Endowed Chair Professor of Water Resources Engineering, 2010-2016

ASCE Ven Te Chow Award, 2009

2009 Ven Te Chow Award Lecturer, ASCE

ASCE Fellow, 2008

ASCE/EWRI JHE 2006 Best paper award,

ASCE Arid Lands Hydraulic Engineering Award, 2001

ASCE Richard Torrens Award, 1999

Listed in American Men and Women of Science

Fulbright Scholar; Purdue University Victor O'Schaunessy Fellow

Member of Phi Kappa Phi Honor Society

Founding Editor-in-Chief of ASCE Journal of Hydrologic Engineering, 1995-2004

Professional Activities:

Member of California Climate Change Advisory Board, 2012- 2015

Member of the Steering Group on Water and Climate Change, Asia-Pacific Water Forum,

June 2010- 2014

Member of the UNESCO Expert Group on Climate Change and Water, 2008- 2012

Founding Editor-in-Chief of ASCE Journal of Hydrologic Engineering, October

1995- June 2004

Member of the Editorial Advisory Boards of:

a) Water Journal, 2018 - ongoing

b) ISH Journal of Hydraulic Engineering (Indian Journal of Hydraulic Engineering), 2012 - ongoing

c) International Journal of Water Quality Exposure and Health, 2008- ongoing

d) UNESCO International Hydrology Series, 2006 – 2012; e) Korean Water Resources Journal, 2004-

2012; f) Open Hydrology Journal, (A Russian-Chinese- Indian international journal in hydrology),

2010- 2015;

Associate Editor of the Hydrological Sciences Journal, 1994-1999

Member of the Editorial Board of the Journal of Hydrology, 1991-1997

Member of the Editorial Board of the journal Advances in Water Resources, 1989-

1994

Member of the Editorial Board of Journal of Stochastic Hydrology and Hydraulics,

1987-1998

Member of the Scientific Committee, 10th International Precipitation Conference, Coimbra, Portugal, June 23-25, 2010

Member of the Scientific Committee, 9th International Precipitation Conference, Paris, France, November 12 –14, 2007

Member of IAHS Working Group on Experimental and Theoretical Hydrology at All Scales, August, 1999 – 2003

Co-convenor of the Soil-Vegetation-Atmosphere Transfer Schemes and Large Scale Hydrological Models Symposium during Sixth Scientific Assembly of IAHS, July 18-27, 2001

Chair of Macroscale Hydrologic Modeling Working Group of IAHS, 1995-1999

Co-director of Center for the Study of Hydro-climatology in the Pacific Rim (Jointly with UCLA), July 1996 - 1999

Convenor of the Surface Water Modeling Symp., Third Scientific Assembly of IAHS, May 10-19, 1989

Chair of ASCE/EWRI Hydroclimate Committee, 2008- ongoing

Chair of ASCE J. Hydrologic Engineering Publications Committee, 1995-2004

Member of ASCE Hydrology Technical Oversight Committee, ASCE Surface Water Hydrology Committee, ASCE Groundwater Hydrology Committee, 1996- 2004

Member of ASCE EWRI Publications Committee 1996-2004

Member of AGU, ASCE, AIH, IAHS, EGS

External Examiner for Ph.D. theses for various Departments of Civil Engineering at Indian Institute of Technologies

Invited Expert Reviewer for the IPCC (Intergovernmental Panel on Climate Change) Fourth Assessment Report of Working Group II

Professional Activities within ASCE:

Founding Editor-in-Chief of ASCE Journal of Hydrologic Engineering, October 1995- June 2004;

Chair of ASCE/EWRI Hydroclimate Committee, 2008- ongoing

Chair of ASCE J. Hydrologic Engineering Publications Committee, 1995-2004

Member of ASCE Hydrology Technical Oversight Committee, ASCE Surface Water Hydrology Committee, ASCE Groundwater Hydrology Committee, 1996- 2004

Member of ASCE EWRI Publications Committee 1996-2004

Research:

Dr. Kavvas' areas of specialization include mathematical modeling of the integrated hydrologic-atmospheric processes at global, continental, country and watershed scales for the simulation and prediction of hydrologic water balances and hydrologic extremes toward quantifying phenomena such as floods and droughts; mathematical modeling of hydrologic processes at regional, watershed and hillslope scales; investigations on the mathematical modeling of contaminant transport by inland surface waters, unsaturated flow and groundwater flow, and physical hydraulic modeling and mathematical modeling of environmental fluid flows.

Publications:

Author of 281 papers in surface and subsurface hydrology and hydrometeorology;

Representative papers related to modeling hydro-climate processes and surface and subsurface hydrologic processes are as follows:

K. Toride, D. Cawthorne, K. Ishida, M. L. Kavvas, M.L. Anderson.

- " Long-term trend analysis on total and extreme precipitation over Shasta Dam watershed",
Science of the Total Environment 626, 244-254, 2018
- A. Dib and M.L. Kavvas
 " Ensemble modeling of stochastic unsteady open-channel flow in terms of its time-space evolutionary probability distribution: theoretical development"
Hydrol. Earth Syst. Sci. - <https://doi.org/10.5194/hess-2017-393>, 2017
- A. Dib and M.L. Kavvas
 " Ensemble modeling of stochastic unsteady open-channel flow in terms of its time-space evolutionary probability distribution: numerical application"
Hydrol. Earth Syst. Sci. - <https://doi.org/10.5194/hess-2017-394>, 2017
- M. L. Kavvas, Tongbi Tu, Ali Ercan, and James Polsinelli
 "Fractional Governing Equations of Transient Groundwater Flow in Confined Aquifers with Multi-Fractional Dimensions in Fractional Time"
Earth Syst. Dynam. In-Press- at <https://doi.org/10.5194/esd-2017-47>
- T. Tu, A. Ercan, M.L. Kavvas
 "Fractal scaling analysis of groundwater dynamics in confined aquifers"
Earth Syst. Dynam., 8, 931-949, 2017
- T. Trinh, M.L. Kavvas, K. Ishida, K. Carr, N. Ohara, K. Carr
 "Projected 21st Century Climate Change on Snow Conditions over Shasta Dam Watershed by means of Dynamical Downscaling"
Hydrological Processes, DOI:10.1002/hyp.11231, 2017
- A. Ercan and M.L. Kavvas
 "Time-Space Fractional Governing Equations of One-Dimensional Unsteady Open Channel Flow Process: Numerical Solution and Exploration"
Hydrological Processes, HYP11240; DOI: 10.1002/hyp.11240, 2017
- Tongbi Tu, Ali Ercan, Kara Carr, T. Trinh, M.L. Kavvas, J. Nosacka
 "Assessment of the Effects of Multiple Extreme Floods on Flow and Transport Processes under Competing Flood Protection and Environmental Management Strategies"
Science of the Total Environment; Ms. Ref. No.: STOTEN-D-17-03402R1, 2017
- A. Ercan and M.L. Kavvas
 "Scaling Relations and Self-Similarity of 3-Dimensional Reynolds-Averaged Navier-Stokes Equations",
Nature-Scientific Reports, Manuscript id: SREP-17-14831A, 2017
- M. L. Kavvas, Tongbi Tu, Ali Ercan, and James Polsinelli
 "Fractional Governing Equations of Transient Groundwater Flow in Confined Aquifers with Multi-Fractional Dimensions in Fractional Time"
Earth Syst. Dynam. In-Press- at <https://doi.org/10.5194/esd-2017-47>
- M.L. Kavvas, N. Ohara, K. Ishida and A. Ercan
 "Time-Space Modeling of Precipitation"
 Chp. 41 in *Handbook of Applied Hydrology*, ed. by V.P. Singh, Second Edition, pp.41-1- 41-10, 2017
- M.L. Kavvas, A. Ercan, J. Polsinelli
 "Governing equations of transient soil water flow and soil water flux in multi-dimensional fractional anisotropic media and fractional time"
Hydrol. Earth Syst. Sci. , Special Issue: Modeling hydrological processes and changes 21, 1547-1557, doi:10.5194/hess-21-1547-2017, 2017
- T. Trinh, K. Ishida, M. L. Kavvas, A. Ercan, K. Carr
 "Assessment of 21st century drought conditions at Shasta Dam based on dynamically projected water supply conditions by a regional climate model coupled with a physically-based hydrology model"
Science of the Total Environment, doi: 10.1016/j.scitotenv.2017.01.202; 586, 197-205, 2017
- K. Ishida, M. Gorguner, A. Ercan, T. Trinh, M.L. Kavvas
 "Trend Analysis of Watershed-scale Precipitation over Northern California by Means of Dynamically-Downscaled CMIP5 Future Climate Projections"
Science of the Total Environment; 592:12-24. doi: 10.1016/j.scitotenv.2017.03.086, 2017

- K. Ishida and M. L. Kavvas
 "Climate change analysis on historical watershed-scale precipitation by means of long-term dynamical downscaling"
 Hydrol. Process. **31**, 35-50; DOI: 10.1002/hyp.10932, 2017
- A. Ercan, M. L. Kavvas, K. Carr, Z. Hockett, H. Bandeh, T. D. Mussen, D. Cocherell, J. B. Poletto, J. J. Cech, Jr., and N. A. Fangue
 "Hydraulics near unscreened diversion pipes in open channels: Large flume experiments"
 J. of American Water Resources Association (JAWRA) D01:10.1111/1752-1688.12503, Vol. 53, No.2, 431-441, 2017
- M.L. Kavvas and A. Ercan
 "Time-space fractional governing equations of unsteady open channel flow"
 J. of Hydrologic Engineering.22 (2) 04016052-1-7, [http://dx.doi.org/10.1061/\(ASCE\)HE.1943-5584.0001460](http://dx.doi.org/10.1061/(ASCE)HE.1943-5584.0001460) . 2017
- N. Ohara, M.L. Kavvas, M.L. Anderson, Z.Q. Chen, K. Ishida
 "Characterization of Extreme Storm Events Using a Numerical Model Based Precipitation Maximization Procedure in Feather, Yuba, and American River Watersheds in California"
 Journal of Hydrometeorology, 1413-1423, <http://dx.doi.org/10.1175/JHM-D-15-0232.s1>. April, 2017
- S. Jang, M.L. Kavvas, K. Ishida, T. Trinh, N. Ohara, S. Kure, Z.Q. Chen, M.L. Anderson, G. Matanga, K.J. Carr
 " A Performance Evaluation of Dynamical Downscaling of Precipitation over Northern California"
 Sustainability journal Special Issue "Special Issue "Geospatial Technologies for Sustainable Natural Resources", Sustainability 2017, 9, 1457; doi:10.3390/su9081457
- S. Jang, S. Kure, N. Ohara, Levent Kavvas, Z.Q. Chen, K.J. Carr, M.L. Anderson
 "Application of WEHY-HCM for Modeling Interactive Atmospheric-Hydrologic Processes at Watershed Scale to a Sparsely Gauged Watershed", Sustainability, 2017, 9, 1554, doi: 10.3390/su9091554
- T.Trinh, S. Jang, K.Ishida, N. Ohara , Z. Chen, M.L. Anderson, Y. Darama, J. Chen and M. L. Kavvas
 "Reconstruction of Historical Inflows into and Water Supply from Shasta Dam by Coupling a Physically-Based Hydro-Climate Model with a Reservoir Operation Model"
 Journal of Hydrologic Engineering 21(9):04016029, 2016
- M.L. Kavvas
 "Some issues and emerging methods in the modeling of hydrologic processes"
 (Invited paper on the occasion of Japan Society of Hydrology and Water Resources International Award).
 Journal of the Japan Society of Hydrology and Water Resources, Vol. 29, No.1, pp.4-13, 2016
- Toan Quang Trinh; Kei Ishida; Ida Fischer; Su-hyung Jang; John Nosacka; Kevin Brown; Yakup Darama; M. Levent Kavvas.
 "New Methodology to Develop Future Flood Frequencies under Changing Climate by Means of Physically-based Numerical Atmospheric-Hydrologic Modeling", Accepted for publication in ASCE J. of Hydrologic Engineering. 2016
- Chen, J., M. L. Kavvas, K. Ishida, T. Trinh, N. Ohara, M. L. Anderson, Z.Q. Chen
 "Does the maximum precipitation always result in the maximum flood: Role of snowmelt"
 Accepted for publication in the Journal of Hydrologic Engineering, 2016
- K.J. Carr, T. Tu, A. Ercan, M.L. Kavvas, J. Nosacka
 "Two-dimensional unsteady flow modeling of flood inundation in a leveed basin"
 Proceedings of World Environmental and Water Resources Congress 2015: Floods, Droughts, and Ecosystems, pp. 1597-1606, May 2015
- A. Dib, K. Ishida, M.L. Kavvas, S. Jang, Z.Q. Chen
 "Analysis of precipitation using fine-scale dynamical downscaling over a sparsely-gauged small watershed"
 Proceedings of World Environmental and Water Resources Congress 2015: Floods, Droughts, and Ecosystems, pp. 928-936, May 2015
- K. Ishida, M.L. Kavvas, S. Jang, Z.Q. Chen, N. Ohara, M.L. Anderson

- "Physically based estimation of maximum precipitation over three watersheds in Northern California: Relative humidity maximization method"
Journal of Hydrologic Engineering, DOI: 10.1061/(ASCE)HE. 1943-5584.0001175, 2015
- K. Ishida, M.L. Kavvas, S. Jang, Z.Q. Chen, N. Ohara, M.L. Anderson
"Physically based estimation of maximum precipitation over three watersheds in Northern California: atmospheric boundary condition shifting"
Journal of Hydrologic Engineering, DOI: 10.1061/(ASCE)HE. 1943-5584.0001026, 2014
- S. Jang, M.L. Kavvas
"Downscaling global climate simulations to regional scales: Statistical downscaling versus dynamical downscaling"
Journal of Hydrologic Engineering, DOI: 10.1061/(ASCE)HE. 1943-5584.0000939, 2014
- S.Jang, M.L. Kavvas, N. Ohara, S. Kure, K. Ishida
"Assessment of change in precipitation frequency under future climate change conditions"
Proceedings of World Environmental and Water Resources Congress, Portland, OR, pp. 596-600, June 2014
- M.L.Kavvas, S. Kure, Z.Q. Chen, N. Ohara, S. Jang
"WEHY-HCM for Modeling Interactive Atmospheric-Hydrologic Processes at Watershed Scale: I. Model Description",
Journal of Hydrologic Engineering, 18(10), 1262-1271, doi: 10.1061/(ASCE)HE. 1943-5584. 0000724, 2013
- S. Kure, S. Jang, N. Ohara, M.L.Kavvas, Z.Q. Chen
"WEHY-HCM for Modeling Interactive Atmospheric-Hydrologic Processes at Watershed Scale: I. Model Application to Ungauged and Sparsely-gauged Watersheds",
Journal of Hydrologic Engineering, 18(10), 1272-1281, doi: 10.1061/(ASCE)HE. 1943-5584. 0000701, 2013
- W. Sharffenberg and M.L.Kavvas
"Uncertainty in Flood Wave Routing in a Lateral Inflow-Dominated Stream"
Journal of Hydrologic Engineering, Vol. 16, No.2, pp. 165-175, 2011
- N. Ohara, M.L.Kavvas, S.Kure, Z.Q.Chen, S.Jang, E.Tan
"Physically Based Estimation of Maximum Precipitation over American River Watershed, California"
Journal of Hydrologic Engineering, Vol. 16, No.4, 351-361, 2011
- Ohara, N., Kavvas, M.L., Easton, D., Dogrul, C.E., Yoon, J., and Chen, Z.Q.,
"Role of snow in runoff processes in a sub-alpine hillslope: Field study in the Ward Creek watershed, Lake Tahoe, California during 2000 and 2001 water years",
Journal of Hydrologic Engineering, ASCE, Vol. 16, No. 6, pp. 521-533, 2011
- H. Mann, M.L.Kavvas, S. Jang, N.Ohara, S.Kure
"Validation of extreme precipitation reconstructed by dynamical downscaling for the Upper Feather, Yuba, and American watersheds"
Proceedings of 2012 World Environmental and Water Resources Congress, New Mexico, May 20-25. Pp. 2030-2035, 2012
- A. Ercan, M.F.Mohammad, M.L.Kavvas
"The impact of climate change on sea level rise at Peninsular Malaysia and Sabah and Sarawak"
Hydrological Processes, Volume 27, Issue 3, pp. 367–377, DOI: 10.1002/hyp.9232, 2013
- S. Jang, M.L.Kavvas, N.Ohara, S.Kure, K.Ishida, G.B.Matanga, K.E.Nelson
"How Realistic are the GCM Climate Projections in Simulating the Recent Past over Northern California?"
Proceedings of World Environmental and Water Resources Congress, Cincinnati; Ed. by C.L. Patterson, S.D. Struck, D.J. Murray, pp. 1164-1167, May 2013
- K.Ishida, S.Jang, N.Ohara, S.Kure, M.L.Kavvas
"Physically Based Maximization of Precipitation over American River Watershed in California"
Proceedings of World Environmental and Water Resources Congress, Cincinnati, Ed. By C.L. Patterson, S.D. Struck, D.J. Murray, pp.1198-1201, May 2013

- S. Kure, S. Jang, N. Ohara, M.L.Kavvas and Z.Q.Chen
 "Hydrologic Impact of regional climate change for the snow-fed and glacier-fed river basins in the Hydrological Processes, 27 (26), 4071-4090, DOI: 10.1002/hyp. 9536, 2013
- A.Ercan, M.F.Mohammad, M.L.Kavvas
 "The impact of climate change on sea level rise at Peninsular Malaysia and Sabah-Sarawak", Hydrological Processes, DOI: 10.1002/hyp.9232, 2012
- M.L.Kavvas, Guest Editor
 Special Issue on "Modeling Hydro-Climate and Climate Change", Journal of Hydrologic Engineering, Vol.16, No.12, 969, 2011
- Z.Q. Richard Chen, M.L. Kavvas, N. Ohara, M.L. Anderson, and J. Yoon,
 "Impact of Water Resources Utilization on the Hydrology of Mesopotamian Marshlands", Journal of Hydrologic Engineering, Vol.16, No.12, 1083-1092, 2011
- Yoshitani, J., M.L. Kavvas, Z.Q. Chen
 "Application of a coupled regional-scale hydrological-atmospheric model to Japan for climate change study", Journal of Hydrologic Engineering, Vol.16, No.12, 1050-1058, 2011
- N.Ohara , Z.Q.Chen, M.L.Kavvas, K.Fukami and H.Inomata
 "Reconstruction of historical atmospheric data by a hydroclimate model for Mekong river basin", Journal of Hydrologic Engineering, Vol.16, No.12, 1030-1039, 2011
- M.Cayar and M.L.Kavvas
 "Symmetry in Nonlinear Hydrologic Dynamics under Uncertainty: Ensemble Modeling of 2D Boussinesq Equation for Unsteady Flow in Heterogeneous Aquifers"
 Journal of Hydrologic Engineering, Vol. 14, No.10, pp. 1173-1184, 2009
- M. Cayar and M.L. Kavvas
 "Ensemble average and ensemble variance behavior of unsteady, one-dimensional groundwater flow in unconfined, heterogeneous aquifers: an exact second-order model"
 Stoch Environ Res Risk Assess, DOI 10.1007/s00477-008-0263-1, 23(7), 2009
- Yoshitani, J., Z.Q.Chen, M.L.Kavvas, and K.Fukami
 "Atmospheric model-based streamflow forecasting at small, mountainous watersheds by a distributed hydrologic model: Application to a watershed in Japan"
 Journal of Hydrologic Engineering, Vol. 14, No.10, 1107-1118, 2009
- M.L.Anderson, Z.Q.Chen, M.L.Kavvas, J.Y.Yoon
 "Reconstructed historical atmospheric data by dynamical downscaling"
 Journal of Hydrologic Engineering, Vol.12, No.2, 156-162, 2007
- M.L.Kavvas, Z.Q.Chen, N.Ohara, K.Fukami, H.Inomata
 "Reconstruction of historical precipitation data at the Mekong River Basin by means of a hydroclimate model"
 Invited Paper. In Proceedings of V. National Hydrology Congress, ODTU, Ankara, Turkey, September 5-7, 2007
- M.L.Kavvas, Z.Q.Chen, N.Ohara, A.J. Bin Shaaban, M.Z.M.Amin
 "Impact of climate change on the hydrology and water resources of Peninsular Malaysia"
 In Proceedings of International Congress on River Basin Management, Antalya, Turkey, March 22-24, 2007
- M.L.Kavvas, J. Yoon, Z.Q.Chen, L.Liang, E.C.Dogrul, N.Ohara, H.Aksoy, M.L.Anderson, J.Reuter, S.Hackley
 "Watershed environmental hydrology model: Environmental module and its application to a California watershed"
 Journal of Hydrologic Engineering, Vol.11, No.3, 261-272, 2006
- M.L.Kavvas, Z.Q.Chen, C.Dogrul, J.Y.Yoon, N.Ohara, L.Liang, H.Aksoy, M.L.Anderson, J.Yoshitani, K.Fukami, T.Matsuura
 "Watershed environmental hydrology (WEHY) model, based on upscaled conservation equations: Hydrologic module"
 Journal of Hydrologic Engineering, Vol.9, No.6, 450-464, 2004
- Z.Q.Chen, M.L.Kavvas, J.Y.Yoon, C.Dogrul, K.Fukami, J.Yoshitani, T.Matsuura

- "Geomorphologic and soil hydraulic parameters for watershed environmental hydrology (WEHY) model"
Journal of Hydrologic Engineering, Vol.9, No.6, 465-489, 2004
- Z.Q.Chen, M.L.Kavvas, K.Fukami, J.Yoshitani, T.Matsuura
"Watershed environmental hydrology (WEHY) model: Model Application"
Journal of Hydrologic Engineering, Vol.9, No.6, 480-490, 2004
- M.L.Kavvas
"Modeling Impact of Climate Change on Hydrology and Water Resources at Various Scales"
Invited. In Lecture Notes of The First International Advanced Course on Water Resources Data Analysis, ed. by M.E.Birpinar, Water Engineering Research and Development Center, Istanbul, 145-167, 2003
- M.L.Anderson, M.L.Kavvas, and M.Mierzwa
"Developing probabilistic representations of climatic influences on hydrological response using a coupled hydrological-atmospheric model"
Hydrological Sciences Journal, Vol.48, No.5, 693-708, 2003
- M.L.Kavvas, Z.Q.Chen and M.L.Anderson
"Downscaling of continental-scale atmospheric forecasts to the scale of a watershed for hydrologic forecasting"
In *Integrated Technologies for Environmental Monitoring and Information Production*, ed. by N.B.Harmancioglu et al., Proceedings of NATO Advanced Research Workshop, 271-288, 2003
- Z.Q.Chen, M.L.Anderson, J. Yoon and M.L.Kavvas
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Report to Japan Ministry of Construction, PWRI, April 2002
- J. Yoshitani, M.L.Kavvas, and Z.Q.Chen
"Regional-scale Hydroclimate Model"
Chapter 7 in *Mathematical Models of Large Watershed Hydrology*, ed. by V.P.Singh and D.K.Frevert, Water Resources Publications LLC, 237-282, 2002
- M.L.Anderson, Z.Q.Chen, M.L.Kavvas, and A.Feldman
"Coupling HEC-HMS with atmospheric models for prediction of watershed runoff"
Journal of Hydrologic Engineering, Vol. 7, No.4, 312-318, 2002
- Z.Q.Chen, M.L.Kavvas, J.Yoshitani, K.Masukura, M.L.Anderson
"Assessing Climate Change Impacts on Regional Water Resources"
Proceedings of ASCE Conference on Water Resources Planning and Management, Ed.by D.F.Kibler, Roanoke, VA, May 19-22, 2002, 11pp., 2002
- A.J.Dolman, A.J.Hall, M.L.Kavvas, T.Oki, and J.W.Pomeroy (co-editors)
Soil-Vegetation-Atmosphere Transfer Schemes and Large-Scale Hydrological Models
International Association of Hydrological Sciences Pub. No. 270, 372pp., 2001
- J.Yoshitani, M.L.Kavvas and Z.Q. Chen
"Coupled regional-scale hydrological-atmospheric model for the study of climate impact on Japan"
In *Soil-Vegetation-Atmosphere Transfer Schemes and Large-Scale Hydrological Models*, Proceedings of International Symposium on S3: Soil-Vegetation-Atmosphere Transfer Schemes and Large-Scale Hydrological Models, during Sixth Scientific Assembly of the International Association of Hydrological Sciences (IAHS), 191-198, 2001
- M.L. Kavvas, Z.-Q. Chen, L. Tan, S.-T. Soong, J. Yoshitani, K. Masukura, M. Kaneki, K. Fukami
"A Coupled Regional Hydrologic-Atmospheric Model for the Study of Hydroclimate over California"
Invited keynote paper, Proceedings of the 4th International Conference on Hydro-Science and Engineering, Vol. IV, Ed. By Yoon, Y.N., Jun, B.H., Seoh, B.H., Choi, G.W., Sept. 26-29, 2000, Seoul, Korea
- M.L. Kavvas, Z. Chen, and M. Anderson

- "Coupling HEC-HMS with Atmospheric Models for the Prediction of Runoff"
Report to U.S. Army Corps of Engineers, Hydrologic Engineering Center, 54 pages, September, 1999
- E.C. Dogrul, M.L. Kavvas and Z.-Q. Chen
"Prediction of Subsurface Stormflow in Heterogeneous Sloping Aquifers"
Journal of Hydrologic Engineering, Vol. 3, No. 4, pp. 258-267, 1998.
- E.C. Dogrul, M.L. Kavvas and Z.-Q. Chen
"Calculation of Subsurface Stormflow in Heterogeneous Sloping Aquifers"
Proceedings of the Ground Water Management Symposium, ed. By J.W. Smith, held in conjunction with the 1998 Int. Water Resour. Eng. Conf. In Memphis, Tennessee, pp. 21-26, 1998.
- M.L. Kavvas, Z.Q. Chen, L. Tan, S.-T. Soong, A. Terakawa, J. Yoshitani, K. Fukami
"A Regional-Scale Land Surface Parameterization Based on Areally-Averaged Hydrologic Conservation Equations"
Hydrological Sciences Journal, 43(4), 611-631, 1998
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Report to U.S. Army Corps of Engineers, Hydrologic Engineering Center, 60 pages, January, 1998
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"Physics of the Spatially Averaged Snowmelt Process"
Journal of Hydrology, Vol.191, pp.179-207, 1997
- M.L.Anderson and M.L.Kavvas
"Analyzing Drought with a Simplified Climate Model"
Proceedings of ASCE North American Water and Environment Congress, June, 1996
- Z.Q.Chen, M.L.Kavvas, L.Tan and S-T.Soong
"Development of a Regional Atmospheric-Hydrologic Model for the Study of Climate Change in California"
Proceedings of ASCE North American Water and Environment Congress, June, 1996
- M.L.Kavvas and M.L.Anderson
"Extreme Droughts"
Chapter 6 in *Hydrology of Disasters*, ed.by V.P.Singh, Water Science and Technical Library, Kluwer Academic Publishers, Netherlands, pp. 127-160, 1996
- M.Nakatsugawa, M.Anderson and M.L.Kavvas
"A Simplified Climate Model with Combined Atmospheric-hydrological Processes"
Hydrological Sciences Journal, Vol.41, No.6, December, 1996
- M.L.Kavvas, Z.-Q.Chen, L.Tan, S.-T.Soong, A.Terakawa, J.Yoshitani, M.Fujikane and A.Watanabe
"A Coupled Mesoscale Hydrologic-Atmospheric Model for the Study of Climate Over Eastern Asia and Japan"
Proceedings of The Second International Study Conference on GEWEX in Asia and GAME, Pattaya, Thailand, pp. 191-194, March, 1995
- M.L.Kavvas, Z.Q.Chen and L.Tan
"Development of a Mesoscale Atmospheric Model for the Scale of Japan: Phase 3 - Climate Change Study with Large Domain Atmospheric Model of Japan and Development of Land Surface Hydrology Model"
Report to Japan Ministry of Construction, P.W.R.I. Grant, 65 pages, 1994
- Z.-Q. Chen, R.S. Govindaraju, and M.L. Kavvas
"Spatial Averaging of Unsaturated Flow Equations Under Infiltration Conditions over Areally Heterogeneous Fields: 1. Development of Models"
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