

Curriculum Vitae

Elfatih A. B. Eltahir

Professor of Environmental Engineering, Department of Civil and Environmental Engineering
Massachusetts Institute of Technology (MIT)

Education

<u>School</u>	<u>Degree</u>	<u>Date</u>
University of Khartoum	B. Sc. in Civil Engineering, First Class Honors	1985
National University of Ireland	M. Sc. in Hydrology, First Class Honors	1988
MIT	S. M. in Meteorology	1993
MIT	Sc. D. in Hydroclimatology	1993

Principal Fields of Interest

Hydrology, Water Resources, and Hydroclimatology

Experience at MIT

<u>Rank</u>	<u>Beginning</u>	<u>Ending</u>
Post Doctoral Associate	January 1993	December 1993
Assistant Professor	January 1994	July 1998
Associate Professor (without tenure)	July 1998	July 2000
Associate Professor (with tenure)	July 2000	July 2003
Professor	July 2003	Present

Professional Service

Member, Editorial Board, *Advances in Water Resources*, 2001 – present

Member of the Institute Committee on Academic Performance (CAP), 2004 – 2008

Graduate Program Officer, Parsons Laboratory, 2004 – present

Convener, Water and Health: Role of Hydrology in the Transmission of Water-borne and
Vector-borne Disease, American Geophysical Union Fall Meeting, December 2007

Member, US National Research Council Committee on Integrated Observation for Hydrologic
and Related Studies, 2005 – 2007

Department Undergraduate Education Committee, 2004

Editor, *Geophysical Research Letters*, January 1998-2001

Chair of the Organizing Committee of the Seventh International Conference on Precipitation,
Rockport, Maine; June 2000-June 2001

Member, Executive Committee, Hydrology Section, American Geophysical Union, September
1998-2001

Organizer and Chair of seven special sessions in the general area of Hydroclimatology during the
meetings of the American Geophysical Union: 1994, 1995, 1996, 1997, 1998, and 1999

Reviewer for several proposals to NASA, NSF, NOAA, EPA, the UK Natural Environment
Research Council, and the Australian Research Council

Reviewer of many papers for *Water Resources Research*, *Journal of Climate*, *Journal of Geophysical Research*, *Geophysical Research Letters*, *Journal of the Atmospheric Science*, *Advances in Water Resources*, and *Journal of Hydrology*, among others.

External Reviewer to Department of Civil and Environmental Engineering, University of Trento, Italy, October 2002

External Examiner to University of Khartoum, Sudan, May 2002

Member of the World Meteorological Organization CLIVAR Africa Task Team, 1999

External Examiner to University of Zululand, South Africa, December 1999

External Examiner to Swiss Federal Institute of Technology (ETH), Switzerland, August 1999

External Examiner to University of Western Australia, Australia, January 1999

Member of the NASA panel on Land Surface Hydrology, September 1998

Member of the NSF/EPA panel on hydrologic vulnerability to global climate change, July 1995

Awards Received

<u>Award</u>	<u>Date</u>
Lyons Prize in Surveying, University of Khartoum <i>for best performance in Surveying</i>	1984
Ministry of Irrigation Prize, University of Khartoum <i>for best performance in Hydraulics and Irrigation</i>	1985
Sudan Engineering Society Prize, University of Khartoum <i>for best B. Sc. thesis</i>	1985
Merghani Hamza Prize, University of Khartoum <i>for best performance in B. Sc. (Civil Engineering) program</i>	1985
McLaughlin Award, National University of Ireland <i>for best performance in the M. Sc. (Hydrology) program</i>	1988
Elsabah Prize <i>for the paper : A Feedback Mechanism in Annual Rainfall in Central Sudan</i>	1992
NASA Fellowship in Global Change Research	1991-1993
Gilbert Winslow Career Development Chair, MIT	1995-1998
NASA New Investigator Award	1996
The US Presidential Award for Scientists and Engineers	1997
The Kuwait Prize in Applied Sciences	2000
Elected Fellow, American Geophysical Union	2008

Current Organization Membership

American Geophysical Union, Fellow

American Meteorological Society

The Royal Meteorological Society

American Society of Civil Engineers

Sudan Engineering Society

Teaching Experience

<u>Term</u>	<u>Subject Number</u>	<u>Title</u>	<u>Role</u>
FT89	1.71	Introduction to Hydrology	Recitations
FT94	1.714	Surface Hydrology	Development, Teaching
IAP95		Ecology of the Nile: Big Dams...	Lectures
ST95	1.715	Environmental Data Analysis	Development, Teaching
FT95	1.714	Surface Hydrology	Teaching
IAP96		Ecology of the Nile: Big Dams...	Lectures
ST96	1.715	Environmental Data Analysis	Teaching
FT96	1.715	Environmental Data Analysis	Teaching
FT96	12.300	Global Change Science	Development, Teaching
ST97	1.714	Surface Hydrology	Teaching
FT97	1.715	Environmental Data Analysis	Teaching
FT97	1.11J	Global Change Science	Teaching
IAP98		Environmental Cost of...3-Gorges	Lectures
ST98	1.715	Surface Hydrology	Teaching
FT98	1.715	Environmental Data Analysis	Teaching
FT98	1.11J	Global Change Science	Teaching
ST99	1.715	Surface Hydrology	Teaching
FT99	1.715	Environmental Data Analysis	Teaching
FT99	1.11J	Global Change Science	Teaching
ST00	1.715	Surface Hydrology	Teaching
FT00	1.11J	Global Change Science	Teaching
FT00	1.016	Introduction to Env. Engineering	Development & Teaching
ST01	1.714	Surface Hydrology	Teaching
FT02	1.071	Global Change Science	Teaching
ST03	1.714	Surface Hydrology	Teaching
FT03	1.715	Environmental Data Analysis	Teaching
ST04	1.714	Surface Hydrology	Teaching
ST04	1.096	Environmental Engineering Clinic	Teaching
FT04	1.071	Global Change Science	Teaching

ST05	1.714	Surface Hydrology	Teaching
FT05	1.715	Environmental Data Analysis	Teaching
ST06	1.714	Surface Hydrology	Teaching
FT06	1.071	Global Change Science	Development & Teaching
ST07	1.714	Surface Hydrology	Teaching
ST07	1.096	Environmental Engineering Clinic	Coordination
FT07	1.715	Environmental Data Analysis	Teaching
ST08	1.714	Surface Hydrology	Teaching

Summary of Theses Supervision

	<u>Total</u>	<u>Completed</u>	<u>In Progress</u>
Bachelor's	6	6	0
Master's	13	12	1
M Eng	6	6	0
Doctoral			
As supervisor	11	8	3

Bachelor's Theses

(i) A Computer Laboratory for Hydroclimatology, Design of the Database Structure;
DeWang Li (EECS); June 1996

(ii) A Computer Laboratory for Hydroclimatology, Design of the User-interface;
Lucy Phan (EECS); June 1996

(iii) Hydrology of Lake Victoria;
Stephanie Sparvero (CEE); June 1996

(iv) Evaporation from Harvard Forest;
Julia Choi (CEE); June 1996

(v) Impact of a Hypothetical Regional Warming on the Soil Moisture Conditions in North America;
Sonia Senevirante (ETH, Zurich); April 1999

(vi) Preliminary Investigation of New Hypothesis on the Emergence of Savannas;
Sarah L. McDougal; June 2001

Master's Theses

(i) The Relationship between Topography and Soil Moisture Distribution;
Eddie J. Humphries; June 1996

(ii) The Role of Land-Atmosphere-Ocean Interactions in Rainfall Variability over West Africa;
Cuiling Gong; June 1996

(iii) The Role of Soil Moisture in the Dynamics of Floods and Droughts over the Midwest;
Jeremy Pal; June 1997

(iv) Observational Analysis of the Soil Moisture - Rainfall Feedback;
Kirsten Findell; June 1997

(v) Biosphere-atmosphere Interaction in a 1-D Climate Model of the Tropics;
Julie Kiang; January 1999

(vi) Coupling a Biosphere-atmosphere Transfer Scheme with a Mesoscale Atmosphere Model: A Case Study in Deforestation;
Li Yu; January 1999 (co-supervised with Professor Rafael Bras, CEE)

(vii) The Impact of Deforestation and Desertification on the Climate of West Africa;
Luis Perez-Prado; June 2000

(viii) The Role of Biosphere-Atmosphere-Ocean Interactions in the Climate of West Africa during the Middle Holocene;
Michelle Irizarry; June 2001

(ix) A New Hypothesis for the Emergence of Savanna;
Yeonjoo Kim; June 2003

(x) Coupling of Integrated Biosphere Simulator to Regional Climate Model version 3;
Jonathan Winter; June 2006

(xi) The Hydrometeorology of Kuwait: Characterization and Modeling of Rainfall Distribution;
Marc Pace Marcella; February 2008

(xii) The potential for environmental management to contribute to malaria vector control in western Niger;
Rebecca Gianotti; June 2008

Doctoral Theses, Supervisor

(i) Mesoscale Circulations induced by Heterogeneity of the Land Surface Characteristics;
Jingfeng Wang; February 1997 (co-supervised with Professor Rafael Bras, CEE)

(ii) A Theory for Moist Zonally Symmetric Thermally Direct Circulations and its Applications to the West African Monsoon;
Xinyu Zheng; February 1997 (co-supervised with Professor Alan Plumb, EAPS)

(iii) The Role of Vegetation Dynamics in the Climate of West Africa;
Guiling Wang; October 1999

(iv) Atmospheric Controls on Soil Moisture Boundary Layer Interactions;
Kirsten Findell; January 2001

(v) Modeling the Role of Soil Moisture in the North American Summer Climate;
Jeremy Pal; January 2001

(vi) Representation of Water Table Dynamics in a Land-surface Scheme: Observations, Models, and Analyses;
Pat J.-F. Yeh; September 2002

(vii) Pilot Study on Simulation and Interactive Modelling of the Biosphere-atmosphere System applied to the Dhofar Region;
Anke Hildebrandt; March 2005

(viii) The Hydrology of Malaria: Field Observations and Mechanistic Modeling of the Malaria Transmission Response to Environmental and Climatic Variability;
Arne Bomblies; February 2009

Papers in Refereed Journals

1. Eltahir, E. A. B., 1988. Testing Trends in Annual Rainfall in Central and Western Sudan, *Sudan Engineering Society Journal*, 30: 37-50.
2. Eltahir, E. A. B., 1989. A Feedback Mechanism in Annual Rainfall in Central Sudan, *Journal of Hydrology*, 110: 323-334.
3. Eltahir, E. A. B., 1992. Forecast of Winter Flow in the Blue Nile, *Sudan Engineering Society Journal*, 32: 55-68.
4. Eltahir, E. A. B., 1992. Drought Frequency Analysis of Annual Rainfall Series in Central and Western Sudan, *Hydrological Sciences Journal*, 37: 185-199.
5. Eltahir, E. A. B. and R. L. Bras, 1993. Estimation of the Fractional Coverage of Rainfall in Climate Models, *Journal of Climate*, 6: 639-644.
6. Eltahir, E. A. B. and R. L. Bras, 1993. A Description of Rainfall Interception Over Large-areas, *Journal of Climate*, 6: 1002-1008.
7. Eltahir, E. A. B. and R. L. Bras, 1993. On the Response of the Tropical Atmosphere to Large-scale Deforestation, *Quarterly Journal of the Royal Meteorological Society*, 119: 779-793.
8. Eltahir, E. A. B. and R. L. Bras, 1994. Precipitation Recycling in the Amazon Basin, *Quarterly Journal of the Royal Meteorological Society*, 120: 861-880.
9. Eltahir, E. A. B. and R. L. Bras, 1994. Sensitivity of Regional Climate to Deforestation in the Amazon Basin, *Advances in Water Resources*, 17: 101-115.
10. Bo, Z., S. Islam, and E. A. B. Eltahir, 1994. Aggregation-Disaggregation Properties of a Stochastic Rainfall Model, *Water Resources Research*, 30(12): 3423-3435.
11. Eltahir, E. A. B., 1996. El Niño and the Natural Variability in the Flow of the Nile River, *Water Resources Research*, 32(1): 131-137.
12. Eltahir, E. A. B. and C. Gong, 1996. Dynamics of Wet and Dry Years in West Africa, *Journal of Climate*, 9(5): 1030-1042.
13. Eltahir, E. A. B., 1996. The Role of Vegetation in Sustaining Large-scale Atmospheric Circulations in the Tropics, *Journal of Geophysical Research*, 101(D2): 4255-4268.
14. Wang, J., R. L. Bras and E. A. B. Eltahir, 1996. Stochastic Modelling of Thermally Induced Atmospheric Flow at the Mesoscale, *Meccanica*, 31: 15-25.

15. Wang, J., R. L. Bras and E. A. B. Eltahir, 1996. A Stochastic Linear Theory of Mesoscale Circulation Induced by the Thermal Heterogeneity of the Land Surface, *Journal of the Atmospheric Sciences*, 53(22): 3349-3366.
16. Eltahir, E. A. B. and R. L. Bras, 1996. Precipitation Recycling, *Reviews of Geophysics*, 34(3): 367-379.
17. Gong, C. and E. A. B. Eltahir, 1996. Sources of Moisture for Rainfall in West Africa, *Water Resources Research*, 32(10): 3115-3121.
18. Eltahir, E. A. B. and J. Pal, 1996. Relationship Between Surface Conditions and Subsequent Rainfall in Convective Storms, *Journal of Geophysical Research*, 101(D21): 26,237-26,245.
19. Zheng, X. and E. A. B. Eltahir, 1997. The Response to Deforestation and Desertification in a Model of West African Monsoons, *Geophysical Research Letters*, 24(2): 155-158.
20. Findell, K. and E. A. B. Eltahir, 1997. An Analysis of the Soil Moisture - Rainfall Feedback, Based on Direct Observations from Illinois, *Water Resources Research*, 33(4): 725-735.
21. Amarasekera, K. N., R. F. Lee, E. R. Williams and E. A. B. Eltahir, 1997. ENSO and the Natural Variability in the Flow of Tropical Rivers, *Journal of Hydrology*, 200(1): 24-39.
22. Wang, J., E. A. B. Eltahir and R. L. Bras, 1998. Numerical Simulation of the Non-linear Mesoscale Circulation Induced by Thermal Heterogeneity of the Land Surface, *Journal of the Atmospheric Sciences*, 55(3): 447-464.
23. Eltahir, E. A. B., 1998. A Soil Moisture - Rainfall Feedback Mechanism, 1. Theory and Observations, *Water Resources Research*, 34(4): 765-776.
24. Zheng, X. and E. A. B. Eltahir, 1998. A Soil Moisture - Rainfall Feedback Mechanism, 2. Numerical Experiments, *Water Resources Research*, 34(4): 777-786.
25. Moglen, G., E. A. B. Eltahir and R. L. Bras, 1998. On the Sensitivity of Drainage Density to Climate Change, *Water Resources Research*, 34(4): 855-862.
26. Yeh, P. J.-F. and E. A. B. Eltahir, 1998. Stochastic Analysis of the Relationship Between Topography and the Spatial Distribution of Soil Moisture, *Water Resources Research*, 34(5): 1251-1263.

27. Zheng, X. and E. A. B. Eltahir, 1998. The Role of Vegetation in the Dynamics of West African Monsoons, *Journal of Climate*, 11(8): 2078-2096.
28. Yeh, P. J.-F., M. Irizzary and E. A. B. Eltahir, 1998. Hydroclimatology of Illinois: A Comparison of the Estimates of Evaporation Based on Atmospheric Water Balance and Soil Water Balance, *Journal of Geophysical Research*, 103(D16): 19,823-19,837.
29. Eltahir, E. A. B. and E. J. Humphries, 1998. The Role of Clouds in the Surface Energy Balance over the Amazon Forest, *International Journal of Climatology*, 18(14): 1575-1591.
30. Eltahir, E. A. B. and G. Wang, 1999. Nilometers, El Niño and Climate Variability, *Geophysical Research Letters*, 26(4): 489-492.
31. Eltahir, E. A. B. and P. Yeh, 1999. On the Asymmetric Response of Aquifer Water Level to Droughts and Floods in Illinois, *Water Resources Research*, 35(4): 1199-1217.
32. Zheng, X., E. A. B. Eltahir and K. A. Emanuel, 1999. A Mechanism Relating Spring Sea Surface Temperature in the Tropical Atlantic and Rainfall Variability over West Africa, *Quarterly Journal of the Royal Meteorological Society*, 125(556): 1129-1164.
33. Wang, G. and E. A. B. Eltahir, 1999. Use of ENSO Information for Medium- and Long-range Forecasting of the Nile Floods, *Journal of Climate*, 12(6): 1726-1737.
34. Findell, K. and E. A. B. Eltahir, 1999. Analysis of the Pathways Relating Soil Moisture and Subsequent Rainfall in Illinois, *Journal of Geophysical Research*, 104(D24): 31,565-31,574.
35. Kiang, J. and E. A. B. Eltahir, 1999. The Role of Ecosystem Dynamics in Biosphere-Atmosphere Interactions over the Coastal Region of West Africa, *Journal of Geophysical Research*, 104(D24): 31,173-31,189.
36. Wang, J., E. A. B. Eltahir and R. L. Bras, 2000. On the Impact of Observed Deforestation on the Mesoscale Distribution of Rainfall and Clouds in Amazonia, *Journal of Hydrometeorology*, 1: 267-286.
37. Wang, G. and E. A. B. Eltahir, 2000. Biosphere-Atmosphere Interaction Over West Africa: 1. Development and Validation of a Coupled Dynamic Model, *Quarterly Journal of the Royal Meteorological Society*, 126(565): 1239-1260
38. Wang, G. and E. A. B. Eltahir, 2000. Biosphere-Atmosphere Interaction Over West Africa: 2. Multiple Climate Equilibria, *Quarterly Journal of the Royal Meteorological Society*, 126(565): 1261-1280.

39. Wang, G. and E. A. B. Eltahir, 2000. Ecosystem Dynamics and the Sahel Drought, *Geophysical Research Letters*, 27(6): 795-798.
40. Wang, G. and E. A. B. Eltahir, 2000. Role of Vegetation Dynamics in Enhancing the Low-Frequency Variability of the Sahel Rainfall, *Water Resources Research*, 36(4): 1013-1021.
41. Wang, G. and E. A. B. Eltahir, 2000. Modelling the Biosphere-Atmosphere System: The Impact of Sub-Grid Variability in Rainfall Interception, *Journal of Climate*, 13: 2887-2899.
42. Pal, J., E. Small and E. A. B. Eltahir, 2000. Simulation of Regional Scale Water and Energy Budgets: Representation of Subgrid Cloud and Precipitation Processes within RegCM, *Journal of Geophysical Research*, 105(D24): 29579-29594.
43. Pal, J. and E. A. B. Eltahir, 2001. Pathways Relating Soil Moisture Conditions to Future Summer Rainfall within a Model of the Land-atmosphere System, *Journal of Climate*, 14(6): 1227-1242.
44. Marani, M., E. A. B. Eltahir and A. Rinaldo, 2001. Geomorphic Controls on Regional Baseflow, *Water Resources Research*, 37(10): 2619-2630.
45. Seneviratne, S. I., J. S. Pal, E. A. B. Eltahir and C. Schar, 2002. Summer Dryness in a Warmer Climate: A Process Study with a Regional Climate Model, *Climate Dynamics*, 20: 69-85.
46. Wang, G. and E. A. B. Eltahir, 2002. Impact of CO₂ Concentration Changes on the Biosphere-Atmosphere System of West Africa, *Global Change Biology*, 8: 1169-1182.
47. Pal, J. S. and E. A. B. Eltahir, 2002. Teleconnections of Soil Moisture and Rainfall during the 1993 Midwest Summer Flood, *Geophysical Research Letters*, 10.1029/2002GL014815.
48. Barros A. P. and E. A. B. Eltahir, 2002. Foreword to Special Section on Observation, Estimation, and Prediction of Precipitation Variability at all Scales: Seventh International Conference on Precipitation, *Journal of Geophysical Research*, 108(D8): 8376, doi:10.1029/2002JD003198.
49. Irizarry-Ortiz, M. M., G. Wang and E. A. B. Eltahir, 2003. Role of the Biosphere in Mid-Holocene Climate of West Africa. *Journal of Geophysical Research*, 108(D2): 4042, doi:10.1029/2001JD000989.

50. Findell, K. L. and E. A. B. Eltahir, 2003. Atmospheric Controls on Soil Moisture-Boundary Layer Interactions; Part I: Framework Development. *Journal of Hydrometeorology*, 4(3): 552-569.
51. Findell, K. L. and E. A. B. Eltahir, 2003. Atmospheric Controls on Soil Moisture-Boundary Layer Interactions; Part II: Feedbacks within the Continental United States. *The Journal of Hydrometeorology*, 4(3): 570-583.
52. Pal, J. S. and E. A. B. Eltahir, 2003. A Feedback Mechanism between Soil Moisture Distribution and Storm Tracks, *Quarterly Journal of the Royal Meteorological Society*, 129(592): 2279-2297.
53. Findell, K. L. and E. A. B. Eltahir, 2003. Atmospheric Controls on Soil Moisture-Boundary Layer Interactions: Three-Dimensional Wind Effects, *Journal of Geophysical Research*, 108(D8): 8385.
54. Niemann J. D. and E. A. B. Eltahir, 2004. Prediction of regional water balance components based on climate, soil, and vegetation parameters, with application to the Illinois River Basin, *Water Resources Research*, 40: W03103, doi:10.1029/2003WR002806.
55. Wang, G., E. A.B. Eltahir, J. A. Foley, D. Pollard and S. Levis, 2004. Decadal variability of rainfall in the Sahel: results from the coupled GENESIS-IBIS atmosphere-biosphere model. *Climate Dynamics*, 22: 625-637.
56. Kim, Y. and E. A. B. Eltahir, 2004. Role of topography in facilitating coexistence of trees and grasses within savannas. *Water Resources Research*, 40(7): W07505, doi:10.1029/2003WR002578.
57. Eltahir, E. A. B., B. Loux, T. K. Yamana, and A. Bombliès, 2004. A See-Saw Oscillation Between the Amazon and Congo Basins, *Geophysical Research Letters*, 31, L23201, doi:10.1029/2004GL021160.
58. Yeh, P. J.-F. and E. A. B. Eltahir, 2005. Representation of water table dynamics in a land surface scheme. Part I. Model development, *Journal of Climate*, 18(12): 1861-1880.
59. Yeh, P. J.-F. and E. A. B. Eltahir, 2005. Representation of water table dynamics in a land surface scheme. Part II. Subgrid variability, *Journal of Climate*, 18(12): 1881-1901.
60. Niemann J. D. and E. A. B. Eltahir, 2005. Sensitivity of regional hydrology to climate changes, with application to the Illinois River basin. *Water Resources Research*, 40: W07014, doi:10.1029/2004WR003893.

61. Hildebrandt, A. and E. A. B. Eltahir, 2006. Forest on the edge: Seasonal cloud forest in Oman creates its own ecological niche. *Geophys. Res. Lett.*, 33, L11401, doi:10.1029/2006GL026022.
62. Hildebrandt, A., M. Al Aufi, M. Amerjeed, M. Shammass and E. A. B. Eltahir, 2007. Ecohydrology of a seasonal cloud forest in Dhofar: 1. Field experiment. *Water Resources Research*, 43, W10411, doi:10.1029/2006WR005261.
63. Hildebrandt, A. and E. A. B. Eltahir, 2007. Ecohydrology of a seasonal cloud forest in Dhofar: 2. Role of clouds, soil type, and rooting depth in tree-grass competition. *Water Resources Research*, 43, W11411, doi:10.1029/2006WR005262.
64. Marcella, M. P. and E. A. B. Eltahir, 2008. Modeling the hydroclimatology of Kuwait: the importance of subcloud evaporation in semi-arid climates. *Journal of Climate*, 12(21): 2976-2989.
65. Gianotti, R. L., A. Bomblies, M. Dafalla, I. Issa-Arzika, J. Duchemin and E.A.B. Eltahir, 2008. Efficacy of local neem extracts for sustainable malaria vector control in an African village. *Malaria Journal*, 7(138).
66. Hildebrandt, A. and E. A. B. Eltahir, 2008. Using a horizontal precipitation model to investigate the role of turbulent cloud deposition in survival of a seasonal cloud forest in Dhofar, *Journal of Geophysical Research*, 113, G04028, doi:10.1029/2008JG000727.
67. Marcella, M. P. and E. A. B. Eltahir, 2008. The Hydroclimatology of Kuwait: Explaining variability of rainfall at seasonal and inter-annual timescales. *Journal of Hydrometeorology*, 9: 1095-1105, doi: 10.1175/2008JHM952.1.
68. Bomblies, A., J. Duchemin and E. A. B. Eltahir, 2008. Hydrology of malaria: Model development and application to a Sahelian village, *Water Resources Research*, 44, W12445, doi:10.1029/2008WR006917.
69. Vivoni, E. R., F. Di Benedetto, S. Grimaldi and E. A. B. Eltahir, 2008. Hypsometric control on surface and subsurface runoff, *Water Resources Research*, 44, W12502, doi:10.1029/2008WR006931.
70. Jiang, L., S. Islam, W. Guo, A. S. Jutla, S.U.S. Senarath, B.H. Ramsay, E. A. B. Eltahir, 2009. A satellite-based Daily Actual Evapotranspiration estimation algorithm over South Florida, *Global and Planetary Change*, doi:10.1016/j.gloplacha.2008.12.008, *in press*.
71. Winter, J. M., J. Pal, E. A. B. Eltahir, Coupling of Integrated Biosphere Simulator to Regional Climate Model version 3, *Journal of Climate*, *in press*.

Proceedings of Refereed Conferences

1. Eltahir, E. A. B. and R. L. Bras, 1992. Spatial Distribution of Precipitation Recycling in the Amazon Basin, in *World at risk: natural hazards and global change*, edited by Rafael L. Bras, pp. 174-180, published by the American Institute of Physics.
2. Wang, G. and E. A. B. Eltahir, 1999. The Role of the Biosphere in the Climate of West Africa, *Proceedings of the International Workshop on West African Monsoon Variability and Predictability (WAMAP)*, Dakar, Senegal, pp. 195-198, published by WMO.
3. Perez-Prado, L. T. and E. A. B. Eltahir, 1999. Mechanisms of Biosphere-Atmosphere-Ocean Interactions over West Africa, *Proceedings of the International Workshop on West African Monsoon Variability and Predictability (WAMAP)*, Dakar, Senegal, pp. 83-86, published by WMO.

Other Major Publications and Conference Presentations

1. Eltahir, E. A. B., 1990. A Model of the Interaction between Atmospheric Processes and Land Processes under Poor Drainage Conditions, *Proceedings of the Chapman Conference on Hydrologic Aspects of Global Climate Change*, June 1990, Lake Chelan.
2. Eltahir, E. A. B., J. A. Ramirez and R. L. Bras, 1990. A Physically-based Hydrologic Rainfall Model, *Proceedings of the AMS Eighth Conference on Hydrometeorology*, American Meteorological Society, pp. 93-98.
3. Eltahir, E. A. B. and R. L. Bras, 1991. Spatial Variability in the Hydrology of the Biosphere-Atmosphere Transfer Scheme, EOS, *Transactions of the American Geophysical Union*, 72(44): 149.
4. Eltahir, E. A. B. and R. L. Bras, 1992. Precipitation Recycling and the Hydrologic Cycle in the Amazon Basin, EOS, *Transactions of the American Geophysical Union*, 73(14): 111.
5. Bras, R. L. and E. A. B. Eltahir, 1992. Estimation of the Fractional Coverage of Rainfall in Climate Models; EOS, *Transactions of the American Geophysical Union*, 73(14): 117.

6. Eltahir, E. A. B. and R. L. Bras, 1992. Sensitivity of Amazonian Runoff to Large Scale Deforestation, EOS, *Transactions of the American Geophysical Union*, 73(43): 102.
7. Eltahir, E. A. B. and R. L. Bras, 1993. Sensitivity of Regional Climate to Small Scale Deforestation in the Amazon Basin, EOS, *Transactions of the American Geophysical Union*, 74(43): 177.
8. Eltahir, E. A. B. and R. L. Bras, 1994. Large Scale Deforestation in the Amazon: Mechanisms of Land-atmosphere Interactions, *European Conference on The Global Energy and Water Cycle*, The Royal Society, London.
9. Eltahir, E. A. B., 1995. On the Relation of Soil Moisture Distribution to Topography, EOS, *Transactions of the American Geophysical Union*, 76(17): S128.
10. Eltahir, E. A. B. and J. Pal, 1995. A Bivariate Stochastic Model of Rainfall and Surface Wet-bulb Temperature, *Proceedings of the International Precipitation Conference*, Crete, Greece.
11. Eltahir, E. A. B. and P. Trowbridge, 1995. A Physical Approach to the Estimation of Rainfall from Space using Multiple Sensors, *Proceedings of the International Precipitation Conference*, Crete, Greece.
12. Moglen, G. E., E. A. B. Eltahir and R. L. Bras, 1995. On the Sensitivity of Drainage Density to Climate Change, EOS, *Transactions of the American Geophysical Union*, 76(46): F270.
13. Eltahir, E. A. B. and C. Gong, 1995. Ocean-Atmosphere-Land Interactions and Rainfall in the Sahel, EOS, *Transactions of the American Geophysical Union*, 76(46): F91.
14. Gong, C. and E. A. B. Eltahir, 1995. Sources of Moisture for Rainfall in the Sahel, EOS, *Transactions of the American Geophysical Union*, 76(46): F127.
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68. Bomblies, A., J-B. Duchemin, L. Descroix and E. A. B. Eltahir. Simulation of Interannual Climate Variability Effects on Malaria Transmission in the Niger Sahel, *AMMA Conference*, Germany, November 2007.
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72. Winter, J. M. and E. A. B. Eltahir. Changes in the Water and Energy Cycles of the American Midwest. *Annual Spring Meeting of the American Geophysical Union*, Fort Lauderdale, FL, May 2008.

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74. Gianotti R. L., A. Bomblies, and E. A. B. Eltahir. Using Hydrologic Modeling to Screen Potential Environmental Management Methods for Malaria Vector Control in Niger. *Annual Fall Meeting of the American Geophysical Union*, San Francisco, CA, December 2008.
75. Marcella M. and E. A. B. Eltahir. Modeling the Hydroclimatology of Kuwait: The Role of Subcloud Evaporation in Semiarid Climates. *Annual Fall Meeting of the American Geophysical Union*, San Francisco, CA, December 2008.
76. Winter J.M. and E. A. B. Eltahir. Improving the Ability of RegCM3-IBIS to Simulate the Hydroclimatology of the American Midwest. *Annual Fall Meeting of the American Geophysical Union*, San Francisco, CA, December 2008.

Internal Memoranda and Progress Reports

1. Eltahir, E. A. B. and R. L. Bras, On the Estimation of the Fractional Coverage of Rainfall in Climate Models, MIT Center for Global Change Science, report No. 15, August 1992.
2. Eltahir, E. A. B., and R. L. Bras, On the Response of the Tropical Atmosphere to Large-Scale Deforestation, MIT Center for Global Change Science, report No. 19, January 1993.
3. Eltahir, E. A. B., The Role of Vegetation in Sustaining Large Scale Atmospheric Circulations in the Tropics, MIT Center for Global Change Science, report No. 34, February 1995.
4. Zheng, X., and E. A. B. Eltahir, The Role of Vegetation in the Dynamics of West African Monsoons, MIT Center for Global Change Science, report No. 41, March 1996.
5. Wang, G., and E. A. B. Eltahir, The Role of Vegetation Dynamics in the Climate of West Africa, Ralph M. Parsons Laboratory Report No. 344, MIT, Cambridge, Massachusetts, 224 pages, November 1999.

Invited Lectures

1. March 1994, "Global Change and Natural Disasters." NASA Workshop on The use of Satellites in Natural Disaster Reduction, Richmond, VA.

2. March 1994, "Deforestation and Regional Climate in the Amazon Basin." Goddard Space Flight Center, NASA, Greenbelt, Maryland.
3. November 1995, "The Role of Vegetation in Sustaining Large Scale Atmospheric Circulations in the Tropics." University of Wisconsin, Madison.
4. October 1996, "The Role of Vegetation in Sustaining Large Scale Atmospheric Circulations in the Tropics." Swiss Federal Institute, Zurich.
5. January 1998, "The Soil Moisture-Rainfall Feedback Mechanism." Swiss Federal Institute, Zurich.
6. November 1998, "Natural Variability in the Regional Hydrological Cycle of Illinois." Boston University, Boston.
7. November 1998, "Biosphere-Atmosphere Interactions." Duke University, Durham.
8. December 1998, "Regional Climate Modeling." AGS, MIT, Cambridge.
9. January 1999, "Biosphere-Atmosphere Interactions." IAP, MIT, Cambridge.
10. February 1999, "Biosphere-Atmosphere Interactions in West Africa." SUNY, Stony Brook, New York.
11. February 1999, "Biosphere-Atmosphere Interactions." John Hopkins University, Baltimore.
12. April 1999, "Recent Progress in Long-range Hydrologic Forecasting." INRS, Université du Québec, Quebec City, Quebec.
13. May 1999, "The Role of Biosphere-Atmosphere Interactions in the Dynamics of Regional Hydrological Droughts and Floods." University of Arizona, Tucson, Arizona.
14. June 1999, "Regional Climate Modeling." International Center for Theoretical Physics, Trieste, Italy.
15. August 1999, "Biosphere-Atmosphere Interactions and the Regional Hydrological Cycle." Potsdam, Germany.
16. April 2000, "The Role of the Biosphere in the Climate of West Africa." Nice, France.

17. June 2000, "Biosphere-Atmosphere Interactions over West Africa." Chapman Conference on the Gaia Hypothesis, Valencia, Spain.
18. October 2000, "Progress in Long-range Hydrologic Forecasting." Entretiens Jacques Cartier, Montreal, Canada.
19. November 2000, "Hydroclimatology: Processes and Mechanisms in Regional Hydrology." University of Cincinnati, Cincinnati, Ohio.
20. November 2000, "The Role of the Biosphere in Climate Change." Kuwait Prize Lecture, Kuwait Institute for Scientific Research, Kuwait.
21. December 2000, "Hydroclimatology: Case Studies from Illinois and the Sahel." Harvard University, Cambridge, Massachusetts.
22. May 2001, "Elements of a Land-atmosphere Interaction Theory." Spring Meeting of the American Geophysical Union, Boston, USA.
23. June 2001, "Recent Advances in Global Change Research." Muscat, Oman.
24. July 2001, "Examples of Recent Advances in Global Hydrology: Does La Niña cause Floods in the Nile Basin? and did deforestation cause the drought in the Sahel?," World Bank, Washington.
25. October 2001, "Role of Biosphere-Atmosphere Interactions in Hydroclimatology of Africa." International Center for Theoretical Physics, Trieste, Italy.
26. October 2002, "Intransitivity in the Climate System: Greening of the Sahara 6000 years ago." Princeton University, Princeton.
27. November 2002, "Fundamental Processes in the Biosphere-atmosphere System." Muscat, Oman.
28. November 2003, "Drought Occurrence in West Africa: Role of Vegetation Dynamics," CLIVAR/PAGES/IPCC workshop on Droughts. Tucson, Arizona, November 18-21.
29. December 2004, "Role of Soil Moisture Distribution in Shaping Regional Climates," Invited Presentation, Fall Meeting of the American Geophysical Union.
30. February 2005, "Regional Climate Modeling: Water, Climate, and Life." American University of Sharjah, United Arab Emirates.
31. April 2005, "Mechanisms of Droughts in West Africa," International Research Institute for Climate Prediction, New York.

32. August 2005, "Monsoons and Malaria in Africa," International Center for Theoretical Physics, Trieste, Italy.
33. October 2005, "Intransitivity in the Climate of Integrated Biosphere-atmosphere Systems," University of Connecticut, Connecticut.
34. March 2006, "Ecohydrology of a Seasonal Cloud Forest in Dhofar," Colorado State University, Fort Collins, CO.
35. May 2006, "West African Monsoon: Regional Feedbacks and Local Impacts," AMMA US meeting, Washington, DC.
36. June 2006, "Ecohydrology of a Seasonal Cloud Forest in Dhofar," Muscat, Oman.
37. September 2006, "Improving Predictability of Floods and Droughts in the Nile Basin," World Bank, Washington, D.C.
38. February 2007, "The Role of Anthropogenic Factors in Causing the Drought in West Africa," Princeton University, Princeton, NJ.
39. March 2007, Ecohydrology of a Seasonal Cloud Forest in Dhofar, ESI Lecture Series, MIT.
40. April 2008, Eco-Friendly Development in Africa, 6th annual Princeton Colloquium on Public and International Affairs "The Grand Challenges: Energy, Development, and Global Health."
41. May 2008, "The Role of Vegetation Cover in Shaping the Climate of Tropical Regions," Hydrology Fellows Session, AGU, May 2008.
42. September 2008, "Climate, Water and Public Health in Africa," 4th World Conference on the Future of Science: Food and Water for Life, Venice, Italy.
43. October 2008, "Past and Present Climate of Africa," MIT Alumni Travel Program, Egypt trip.
44. October 2008, "Hydrology of the Nile," MIT Alumni Travel Program, Egypt trip.
45. November 2008, "Climate Variability, Climate Change, and Adaptation in the Nile Basin," Nile Basin Development Forum, Nile Basin Initiative, Khartoum, Sudan.