

Curriculum Vitae

October 2016

Elfatih A. B. ELTAHIR
Breen M. Kerr Professor of Hydrology and Climate
Professor, Department of Civil and Environmental Engineering
Massachusetts Institute of Technology

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
Singapore Professor of Hydroclimatology	January 2011	December 2011
Associate Department Head	July 2013	June 2016
Breene M. Kerr Professor	September 2016	Present

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
NASA Fellowship in Global Change Research	1991-1993
Gilbert Winslow Career Development Chair, MIT	1995-1998
NASA New Investigator Award	1996
The US Presidential Early Career 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

Professional Service

Member, Scientific Council, International Center for Theoretical Physics, Trieste, Italy
Member, Editorial Board, *Advances in Water Resources*, 2001 – present
Member of the Institute Committee on Academic Performance (CAP), 2004 – 2009
Graduate Program Officer, Parsons Laboratory, 2004 – 2013
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*.
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

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 (3-4): 323-334.
3. Eltahir, E.A. B, 1990. Correction, *Journal of Hydrology*, 114 (1-2): 209-209.
4. Eltahir, E. A. B., 1992. Forecast of Winter Flow in the Blue Nile, *Sudan Engineering Society Journal*, 32: 55-68.
5. Eltahir, E. A. B., 1992. Drought Frequency Analysis of Annual Rainfall Series in Central and Western Sudan, *Hydrological Sciences Journal*, 37 (3): 185-199.
6. Eltahir, E. A. B. and R. L. Bras, 1993. Estimation of the Fractional Coverage of Rainfall in Climate Models, *Journal of Climate*, 6 (6): 639-644.
7. Eltahir, E. A. B. and R. L. Bras, 1993. A Description of Rainfall Interception Over Large-areas, *Journal of Climate*, 6: 1002-1008.
8. 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 (512): 779-793.
9. Eltahir, E. A. B. and R. L. Bras, 1994. The Parametrization of Rainfall, Interception in GCMs—Comment, *Quarterly Journal of the Royal Meteorological Society*, 120(517):733-734.
10. Eltahir, E. A. B. and R. L. Bras, 1994. Precipitation Recycling in the Amazon Basin, *Quarterly Journal of the Royal Meteorological Society*, 120 (518): 861-880.
11. 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.
12. 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.
13. 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.
14. Eltahir, E. A. B. and C. Gong, 1996. Dynamics of Wet and Dry Years in West Africa, *Journal of Climate*, 9(5): 1030-1042.

15. 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.
16. Wang, J., R. L. Bras and E. A. B. Eltahir, 1996. Stochastic Modelling of Thermally Induced Atmospheric Flow at the Mesoscale, *Meccanica*, 31 (1): 15-25.
17. 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.
18. Eltahir, E. A. B. and R. L. Bras, 1996. Precipitation Recycling, *Reviews of Geophysics*, 34(3): 367-379.
19. Gong, C. and E. A. B. Eltahir, 1996. Sources of Moisture for Rainfall in West Africa, *Water Resources Research*, 32(10): 3115-3121.
20. 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.
21. 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.
22. 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.
23. 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(1-4): 24-39.
24. 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.
25. Eltahir, E. A. B., 1998. A Soil Moisture - Rainfall Feedback Mechanism, 1. Theory and Observations, *Water Resources Research*, 34(4): 765-776.
26. Zheng, X. and E. A. B. Eltahir, 1998. A Soil Moisture - Rainfall Feedback Mechanism, 2. Numerical Experiments, *Water Resources Research*, 34(4): 777-786.

27. 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.
28. 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(8): 2075-2075 [Correction].
29. 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.
30. 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.
31. 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.
32. 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.
33. Eltahir, E. A. B. and G. Wang, 1999. Nilometers, El Niño and Climate Variability, *Geophysical Research Letters*, 26(4): 489-492.
34. 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.
35. 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.
36. Wang, G. and E. A. B. Eltahir, 1999. Use of ENSO Information In Medium- and Long-range Forecasting of the Nile Floods, *Journal of Climate*, 12(10): 3164-3164.
37. 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.

38. 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.
39. 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.
40. 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 (3): 267-286.
41. 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
42. 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.
43. Wang, G. and E. A. B. Eltahir, 2000. Ecosystem Dynamics and the Sahel Drought, *Geophysical Research Letters*, 27(6): 795-798.
44. 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.
45. 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(16): 2887-2899.
46. 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.
47. 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.
48. Marani, M., E. A. B. Eltahir and A. Rinaldo, 2001. Geomorphic Controls on Regional Baseflow, *Water Resources Research*, 37(10): 2619-2630.
49. 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(1): 69-85.

50. 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(12): 1169-1182.
51. Pal, J. S. and E. A. B. Eltahir, 2002. Teleconnections of Soil Moisture and Rainfall during the 1993 Midwest Summer Flood, *Geophysical Research Letters* (29(18): 1865, 10.1029/2002GL014815.
52. 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.
53. 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.
54. 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.
55. 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.
56. Pal, J. S. and E. A. B. Eltahir, 2003. A Feedback Mechanism between Soil Moisture Distribution and Storm Tracks [Part A], *Quarterly Journal of the Royal Meteorological Society*, 129(592): 2279-2297.
57. 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.
58. 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(3): W03103, doi:10.1029/2003WR002806.
59. 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(6-7): 625-637.
60. 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.

61. 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(23), L23201, doi:10.1029/2004GL021160.
62. 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.
63. 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.
64. 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.
65. 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(11), L11401, doi:10.1029/2006GL026022.
66. Hildebrandt, A., M. Al Aufi, M. Amerjeed, M. Shamma and E. A. B. Eltahir, 2007. Ecohydrology of a seasonal cloud forest in Dhofar: 1. Field experiment. *Water Resources Research*, 43(10), W10411, doi:10.1029/2006WR005261.
67. 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(11), W11411, doi:10.1029/2006WR005262.
68. 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.
69. Gianotti, R. L., A. Bombliès, 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).
70. 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.
71. Bombliès, 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.

72. Vivoni, ER, Di Benedetto F, Grimaldi S, Eltahir EAB. 2008. Hypsometric control on surface and subsurface runoff. WATER RESOURCES RESEARCH. 44
73. Marcella, M. P. and E. A. B. Eltahir, 2008. The Hydroclimatology of Kuwait: Explaining the Variability of Rainfall at Seasonal and Inter-annual Timescales. *Journal of Hydrometeorology*, Vo.9(5):1095-1105.
74. Winter, JM, Pal JS, Eltahir EAB. 2009. Coupling of Integrated Biosphere Simulator to Regional Climate Model Version 3. JOURNAL OF CLIMATE. 22:2743-2757.
75. Jiang, L, Islam S, Guo W, Jutla A S, Senarath SUS, Ramsay BH, Eltahir EAB. 2009. A satellite-based Daily Actual Evapotranspiration estimation algorithm over South Florida. GLOBAL AND PLANETARY CHANGE. 67:62-77.
76. Gianotti, RL, Bomblies A, Eltahir EAB. 2009. Hydrologic Modeling to Screen Potential Environmental Management Methods for Malaria Vector Control in Niger. WATER RESOURCES RESEARCH. 45 (WO8438): 1-12.
77. Bomblies, A. and E. A. B. Eltahir, 2009. Assessment of the Impacts of Climate Shifts on Malaria Transmission in the Sahel. *Ecohealth*. 8(3):426-437.
78. Bomblies, A, Duchemin J-B, Eltahir EAB. 2009. A Mechanistic Approach for Accurate Simulation of Village Scale Malaria Transmission. MALARIA Journal, Number 223, Volume No. 8
79. Winter JM, and EAB Eltahir, 2010. The Sensitivity of Latent Heat Flux to Changes in the Radiative Forcing: A Framework for Comparing Models and Observations JOURNAL OF CLIMATE Volume: 23(9) Issue: 9 Pages: 2345-2356 Published: MAY 2010.
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81. Marcella MP, Eltahir EAB. 2010. Effects of Mineral Aerosols on the Summertime Climate of Southwest Asia: Incorporating Subgrid Variability in a Dust Emission Scheme. *Journal of Geophysical Research*. 115:D18203. Published: September 17, 2010

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83. Gianotti RL, Zhang D, Eltahir EAB. 2012. Assessment of the Regional Climate Model Version 3 over the Maritime Continent Using Different Cumulus Parameterization and Land Surface Schemes. *Journal of Climate*. 25:638-656.
84. Marcella M P, Elfatih A. B. Eltahir, 2012. The role of lateral boundary conditions in simulations of mineral aerosols by a regional climate model of Southwest Asia, *CLIMATE DYNAMICS* Volume: 38 Issue: 1-2 Pages: 109-120 DOI: 10.1007/s00382-010-0992-y Published: JAN 2012
85. Winter J M and Elfatih A. B. Eltahir, 2012. Modeling the hydroclimatology of the midwestern United States. Part 1: Current climate, *CLIMATE DYNAMICS* Volume: 38 Issue: 3-4 Pages: 573-593 DOI: 10.1007/s00382-011-1182-2 Published: FEB 2012.
86. Winter J M and Elfatih A. B. Eltahir, 2012. Modeling the hydroclimatology of the midwestern United States. Part 2: future climate, *CLIMATE DYNAMICS* Volume: 38 Issue: 3-4 Pages: 595-611 DOI: 10.1007/s00382-011-1183-1 Published: FEB 2012
87. Marcella M P, Elfatih A. B. Eltahir, 2012. Modeling the Summertime Climate of Southwest Asia: The Role of Land Surface Processes in Shaping the Climate of Semi-arid Regions, *JOURNAL OF CLIMATE* Volume: 25 Issue: 2 Pages: 704-719 DOI: 10.1175/2011JCLI4080.1 Published: JAN 15 2012
88. Modathir A. H. Zaroug, M. B. Sylla, F. Giorgi, Elfatih A. B. Eltahir & Pradeep K. Aggarwal, 2012. A sensitivity study on the role of the swamps of southern Sudan in the summer climate of North Africa using a regional climate model, *Theor Appl Climatol*, DOI 10.1007/s00704-012-0751-6, Published September 2012.
89. Siam, Mohamed S.; Demory, Marie-Estelle; Eltahir, Elfatih A. B. Hydrological Cycles over the Congo and Upper Blue Nile Basins: Evaluation of General Circulation Model Simulations and Reanalysis Products *JOURNAL OF CLIMATE* Volume: 26 Issue: 22 Pages: 8881-8894 Published: NOV 2013
90. Yamana, Teresa K.; Eltahir, Elfatih A. B. Projected Impacts of Climate Change on Environmental Suitability for Malaria Transmission in West Africa *ENVIRONMENTAL HEALTH PERSPECTIVES* Volume: 121 Issue: 10 Pages: 1179-1186 Published: OCT 2013
91. Yamana, Teresa K.; Eltahir, Elfatih A. B. Incorporating the effects of humidity in a mechanistic model of *Anopheles gambiae* mosquito population dynamics in the

Sahel region of Africa PARASITES & VECTORS Volume: 6 Article
Number: 235 Published: AUG 9 2013

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94. Zaroug, Modathir A. H.; Sylla, M. B.; Giorgi, F.; et al. A sensitivity study on the role of the swamps of southern Sudan in the summer climate of North Africa using a regional climate model THEORETICAL AND APPLIED CLIMATOLOGY Volume: 113 Issue: 1-2 Pages: 63-81 Published: JUL 2013
95. Gianotti, Rebecca L.; Eltahir, Elfatih A. B.; (2014) Regional Climate Modeling over the Maritime Continent. Part I: New Parameterization for Convective Cloud Fraction JOURNAL OF CLIMATE Volume: 27 Issue: 4 Pages: 1488-1503 Published: FEB 2014
96. Gianotti, Rebecca L.; Eltahir, Elfatih A. B.; (2014) Regional Climate Modeling over the Maritime Continent. Part II: New Parameterization for Autoconversion of Convective Rainfall; JOURNAL OF CLIMATE Volume: 27 Issue: 4 Pages: 1504-1523 Published: FEB 2014
97. Im, Eun-Soon; Marcella, Marc P.; Eltahir, Elfatih A. B.; (2014) Impact of Potential Large-Scale Irrigation on the West African Monsoon and Its Dependence on Location of Irrigated Area; JOURNAL OF CLIMATE Volume: 27 Issue: 3 Pages: 994-1009 Published: FEB 2014
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99. Im, Eun-Soon; Gianotti, Rebecca L.; Eltahir, Elfatih A. B.; (2014); Enhancement of rainfall and runoff upstream from irrigation location in a climate model of West Africa. *Water Resources Research*. 50 Published: NOV 2014
100. Marcella, Marc P.; Eltahir, Elfatih A. B.; (2014) Introducing an Irrigation Scheme to a Regional Climate Model: A Case Study over West Africa; JOURNAL OF CLIMATE; Volume: 27 Issue: 15 Pages: 5708-5723 Published: AUG 1 2014

101. Marcella, Marc P.; Eltahir, Elfatih A. B.; (2014); The role of mineral aerosols in shaping the regional climate of West Africa; JOURNAL OF GEOPHYSICAL RESEARCH-ATMOSPHERES Volume: 119 Issue: 10 Pages: 5806-5822 Published: MAY 27 2014
102. Siam, Mohamed S.; Wang, Guiling; Demory, Marie-Estelle; and Eltahir, EAB, (2014) Role of the Indian Ocean sea surface temperature in shaping the natural variability in the flow of Nile River; CLIMATE DYNAMICS Volume: 43 Issue: 3-4 Pages: 1011-1023 Published: AUG 2014
103. Wei, Jun; Malanotte-Rizzoli, Paola; Eltahir, Elfatih A. B.; et al.; (2014) Coupling of a regional atmospheric model (RegCM3) and a regional oceanic model (FVCOM) over the maritime continent; CLIMATE DYNAMICS Volume: 43 Issue: 5-6 Pages: 1575-1594 Published: SEP 2014
104. Xue, Pengfei; Eltahir, Elfatih A. B.; Malanotte-Rizzoli, Paola; et al, (2014), Local feedback mechanisms of the shallow water region around the Maritime Continent; JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS Volume: 119 Issue: 10 Pages: 6933-6951 Published: OCT 2014
105. Zaroug, M. A. H.; Giorgi, F.; Coppola, E; Eltahir, Elfatih A. B.; (2014) Simulating the connections of ENSO and the rainfall regime of East Africa and the upper Blue Nile region using a climate model of the Tropics; HYDROLOGY AND EARTH SYSTEM SCIENCES Volume: 18 Issue: 11 Pages: 4311-4323 Published: 2014
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 95. Mohamed Siam; Elfatih A. Eltahir, A Mechanism Relating the Indian Ocean SSTs, ENSO, and the Nile Flow AGU Fall Meeting 2012
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100. Gianotti, R. L., and E. A. B. Eltahir. 2013, 'Improving simulation of the feedback between radiation, convective clouds and rainfall over the Maritime Continent', Poster presented at the *European Geophysical Union General Assembly*, Vienna, Austria.
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115. Im, E.-S. and Eltahir, E.A.B. (2014), Introducing the MIT Regional Climate Model (MRCM) and its application to climate studies worldwide, presented at 2014 Annual Meeting of North Pacific Marine Science Organization, Yeosu, Korea, 21 October.
116. Im, E.-S. and Eltahir, E.A.B. (2014), Regional climate projection of the Maritime Continent using the MIT Regional Climate Model, presented at 2014 AGU Fall Meeting, San Francisco, 15-19 December.
117. Eltahir, E.A.B. and Im, E.-S. (2014), Impact of potential large-scale and medium-scale irrigation on the West African Monsoon and its dependence on location of irrigated area, presented at 2014 AGU Fall Meeting, San Francisco, 15-19 December.
118. Yamana, T.K., Bomblies A. and Eltahir, E.A.B., Simulating malaria transmission in the current and future climate of West Africa, Abstract H23F-0938. (Oral presentation). Fall Meeting, AGU, San Francisco, CA, 14-18 December 2015.

119. Pal, JS, and E A B Eltahir (2015) The Role of the Persian Gulf in Shaping Southwest Asian Surface Climate. American Geophysical Union, San Francisco, California, Dec. 2015
120. Eltahir, EAB, and J S Pal, (2015) Regional Climate Change over Southwest Asia. American Geophysical Union, San Francisco, California, Dec. 2015
121. Mohamed S. Siam and Elfatih A. B. Eltahir. Assessment of new large-scale cloud cover and rainfall parameterizations for Regional Climate Modeling over the Upper Blue Nile basin. American Geophysical Union, San Francisco, California, Dec. 2015
122. Yamana, T.K., Bomblies, A and Eltahir, E.A.B., Mechanistic modelling of the links between environment, mosquitoes and malaria transmission in the current and future climates of West Africa, Abstract P1.4.12. (Poster). Fifth International Conference on Infectious Disease Dynamics (Epidemics5), Clearwater Beach, FL, 1-4 December 2015.
123. Endo, N, and E A B Eltahir, "Towards a Predictive Theory of Malaria: Connections to Spatio-temporal Variability of Climate and Hydrology" Endo N, Eltahir EAB, oral presentation at Fall AGU, 2015.
124. Im, E.-S. and Eltahir, E.A.B. (2015), The impact of Horizontal Resolution on Regional Climate Simulations Over the Maritime Continent, presented at 2015 Asia Oceania Geosciences Society Annual meeting, Singapore, 03-07 August.
125. Alter, R. E., E.-S. Im, and E. A. B. Eltahir. "Impacts of irrigation development on regional rainfall in Africa". AGU Fall Meeting 2015, American Geophysical Union, San Francisco, CA (oral).

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. January 2009. Hydrology and Climate of Africa: Past, Present, and Future; UNESCO Chair, Khartoum.
46. February 2009. Hydrology and Climate of Africa: Past, Present, and Future; KICS Lecture Series, Khartoum.
47. March 2009. Climate Change and the Nile Basin; Eastern Nile Council of Ministers, Khartoum.
48. December 2009, Climate Change and the Nile Basin; Keynote Speaker; Nile Basin Initiative 10th Anniversary, Dar Es Salam, Tanzania.
49. January 2010. Current and Projected Climate of the Nile Basin, Ain Sokhna, Egypt
50. June 2010. Regional Climate Modeling at MIT, International Center for Theoretical Physics, Trieste, Italy
51. December 2010. Connections of Water and Malaria in Africa, American Geophysical Union, San Francisco, USA
52. January, 2011. Regional-scale modeling and its connection to global models and oceanic models, CENSAM 4th Annual Workshop, Singapore.

53. April, 2011. Hydro-epidemiology: A Synthesis of Hydrological and Epidemiological Understanding for Better Intervention of Water Related Diseases. General Assembly of the European Geophysical Union, Vienna, Austria.
54. April, 2011. Role of Vegetation in Shaping Climate over Tropical Regions, MIT-Brazil Forum, Cambridge, MA, USA.
55. October 2011. Climate Change and Water in Africa: A Strategic Perspective, First Conference on Climate Change and Development in Africa, Addis Ababa, Ethiopia.
56. November 2011. Climate Change & Sustainable Development in the Nile Basin, MIT Martin Society of Fellows, Cambridge, MA, USA.
57. December 2011. Hydrology of Malaria: A New Class of Models for Studies on Environmental Management and Climate Change, American Geophysical Union, San Francisco, USA. The effect of mineral aerosols on the climate of West Africa (Invited); AGU Fall 2012
58. March 2012. Environmental Determinants of Malaria Transmission in Africa, 6th International Conference on Environmental Mutagens in Human Populations, Doha, Qatar
59. June 2012. Mechanistic Models of Vector-borne Disease Transmission, National Environmental Agency, Singapore,
60. September 2013, Predictions of Droughts: Recent Progress and Some Challenges, Harvard University.
61. February 2014. The hydrology of malaria: Impact of Climate Change on the Potential for Malaria Transmission in West Africa; MIT Joint Program for the Science and Policy of Global Change.
62. February 2014. Impact of Climate Change in Arabia and the Gulf Region; KFAS; Kuwait.
63. February 2014. A Coupled Model of the Gulf-Atmosphere System: Heat and Water Budgets, Masdar Institute, Abu Dhabi.
64. March 2014. Hydrology, Climate, and Health in Africa; Africa Group, MIT.
65. April 2014. Water Balance: 90% of Hydrology?; Nash/Dooge Conference, Dublin, Ireland.

66. April 2014. The Hydrology of Malaria: Role of the Environment in Shaping Malaria Transmission in Africa; Borland Lecture in Hydrology 2014, Colorado State University, Fort Collins, Colorado.
67. June 2014. Regional Climate Modeling Over the Maritime Continent; CENSAM; Singapore.
68. January 2016. Regional Climate of South west Asia, Sultan Qaboos University, Muscat, Sultanate of Oman.
69. February 2016. Current and Future Climate of Southwest Asia, Texas A&M University, Doha, Qatar.
70. February 2016. History, Climate and Hydrology of the Nile basin, Conference on “Scientific Research and Innovation for Sustainable Development in Africa”, University of Khartoum, Khartoum.