

LAREEF ZUBAIR

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Education

Ph.D: Yale University, Mechanical Engineering, 1993.

- Thesis title: "Studies in Turbulence using Wavelet Analysis for data compression and scale separation".

M.Sc: Yale University, Mechanical and Chemical Engineering, 1990.

- Awarded University Fellowship, 1989-90.

B.Sc: University of Peradeniya, Sri Lanka, Chemical and Mechanical Engineering, 1987.

- First Class Honors, Prize for the best undergraduate research project nationally, Valedictorian in Engineering. EOE Pereira Gold Medal for Best All Round Student.

Employment

Columbia University, 2002 to date

Adjunct Associate Research Scientist, Earth and Environmental Engineering (2014-on)
Associate Research Scientist, International Research Institute for Climate and Society, Climate, Monitoring, Diagnostics and Decision Systems, Applications (2002-to 2012)

Foundation for Environment, Climate and Technology, Sri Lanka, 2002 to-date

Principal Scientist

William C. Fulbright Scholarship Board, D.C., 2012 to 2013

Senior Scholar, University of Peradeniya, Sri Lanka

Visiting Fulbright Scholar

University Consortium for Atmospheric Research, 2000 to 2001

Post-Doctoral Research Scientist, Climate Applications

Institute of Fundamental Studies, Sri Lanka, 1997 – 1999

Research Fellow, Computational Mathematics

University of Peradeniya, Sri Lanka, 1995 – 1997

Senior Lecturer in Civil (Environmental) and Mechanical Engineering

Yale University, U.S.A., 1993 - 1995

Post-Doctoral Associate, Departments of Mathematics and Mechanical Engineering

Tutor in Mathematics and Science, Jonathan Edwards College

Academic Publications

by Subject - (Collaborators who were supervised are listed in italics)

CLIMATE DIAGNOSTICS

1. A.K. Srivastava, M. Rajeevan, **L. Zubair** and J. Revadekar, South Asia, in Blunden, Jessica, Derek S. Arndt, 2012: State of the climate in 2011. *Bull. Amer. Meteor. Soc.*, 93, S1–S282.
2. Gadgil, S., M. Rajeevan, **L. Zubair** and P. Yadav, 2011, South Asian Monsoon: Inter Annual Variability, In Eds, Ding et al., *Global Monsoon System, Research and Forecast*, World Scientific Publications and World Meteorological Organization.
3. **Zubair, L.**, *M. Siriwardhana, J. Chandimala, and Z. Yahiya*, 2008, Predictability of Sri Lankan Rainfall based on ENSO, *International Journal of Climatology*. 28 (1): 91-101.
4. **Zubair, L.** and C.F. Ropelewski, 2006, The strengthening relationship of ENSO and the North-East Monsoon rainfall over Sri Lanka and Southern India, *Journal of Climate*, 19 (8): 1567–1575.
5. **Zubair, L.**, S. C. Rao and Toshio Yamagata, 2003, The Influence of the Indian Ocean Dipole on the Sri Lankan Maha rainfall, with *Geophysical Research Letters*, 10 (2): 1063-1066
6. **Zubair, L.**, Diurnal and Seasonal Wind Climate at Sita Eliya, Sri Lanka, *Theoretical and Applied Climatology*, 71 (1-2): 119-127.
7. **Zubair, L.**, 1998, *Diurnal and seasonal variation of surface winds at Hambantota*, Journal of the National Science Council, Sri Lanka, 25(3).235-245p.

CLIMATE IMPACTS ON AGRICULTURE

8. **L. Zubair**, et al. (2014). Climate Change Impacts on Rice Farming Systems in North Western Sri Lanka, In *Handbook of Climate Change and Agroecosystems: Global and Regional Aspects and Implications*. D. Hillel, and C. Rosenzweig, Eds., ICP Series on Climate Change Impacts, Adaptation, and Mitigation, Vol. 3. Imperial College Press. Also a contributor to other papers in the volume on *Integrated Assessment of the Impact of Climate Change on Agriculture: An overview of the AGMIP regional research in South Asia and The AgMIP Coordinated Climate-Crop Modeling Project (C3MP): Methods and Protocols*
9. Rosenzweig, C., .. and **L. Zubair**, (2012). The Agricultural Model Intercomparison and Improvement Project (AgMIP): Integrated regional assessment projects. In *Handbook of Climate Change and Agroecosystems: Global and Regional Aspects and Implications*. D. Hillel, and C. Rosenzweig, Eds., ICP Series on Climate Change Impacts, Adaptation, and Mitigation Vol. 2. Imperial College Press, 263-280.
10. S. Peiris, J. Hansen and **Zubair, L.**, 2008, Use of Seasonal Climate Information to Predict Coconut Production in Sri Lanka, *International Journal of Climatology*, 28 (1) : 103-110.
11. **Zubair, L.**, *R. Perera and Z. Yahiya*, 2004, Was the 2002/03 Maha bumper harvest due to El Nino? *Journal of the Institute of Engineers, Sri Lanka*, XXXVIII, (4): 63 – 70.
12. **Zubair, L.**, 2002, El Nino Influences on Rice Production in Sri Lanka, *International Journal of Climatology*, 22 (2):249-260
13. Fernando, N, **L. Zubair**, T.S.G. Peiris, C.S. Ranasinghe and J. Ratnasiri, 2004, Economic Value of Climate Variability Impacts on Coconut Production in Sri Lanka, *AIACC Working Paper No. 45*, Washington, DC: START.

HYDROCLIMATOLOGY AND WATER RESOURCES MANAGEMENT

14. *Chandimala, J.* and **L. Zubair**, 2008, Predictability of Streamflow and Rainfall for Water Resources Management in Sri Lanka, *Journal of Hydrology*, 335 (3-4), 303-312.
15. **Zubair, L.** and *J. Chandimala*, 2007, Epochal Changes in ENSO-Streamflow relations in Sri Lanka, *Journal of Hydrometeorology*, 7 (6):1237-1246.

16. **Zubair, L.**, 2004, Sensitivity of Kelani streamflow in Sri Lanka to ENSO, *Hydrological Processes*, 17 (12) 2439-2448.
17. **Zubair, L.**, 2003, ENSO influences on Mahaweli streamflow in Sri Lanka, *International Journal of Climatology*, 23(1):91-102.

CLIMATE AND HYDROLOGICAL MODELING

18. Qian, J.-H., and **L. Zubair**, 2011, The effects of grid-resolution and domain choice on the quality of simulations of the South Asian northeast monsoon rainfall, *Monthly Weather Review*. 138 (7): 2780-2802
19. Mahanama, S., Koster, R., Riehl, & **R. Zubair, L.** (2007), The role of soil moisture in seasonal streamflow predictability, *Advances in Water Resources*. 31 (3): 1333-1343.

HAZARDS AND DISASTERS

20. B. Lyon, **Zubair, L.**, V. Ralapanawe and Z. Yahiya, 2009, Fine scale evaluation of drought hazard for tropical climates, *Journal of Applied Meteorology and Climatology*, 48 (1): 77-88.
21. **Zubair, L.**, V. Ralapanawe, U. Tennakone, Z. Yahiya, and R. Perera, 2006, Natural Disaster Risks in Sri Lanka: Mapping Hazards and Risk Hotspots, Chapter 4, in *Natural Disaster Hotspots Case Studies*, Washington, DC: World Bank 2006.
22. **Zubair, L.**, 2004, May 2003 disaster in Sri Lanka and Cyclone 01-B in the Bay of Bengal, *Natural Hazards*, 33: 303-318.
23. **Zubair, L.**, U. Tennakone, Z. Yahiya, J. Chandimala & M.R.A. Siraj, 2004, What led to the May 2003 Floods? *Journal of the Institute of Engineers, Sri Lanka*, XXXVI (3): 51 – 56.

CLIMATE IMPACTS ON HEALTH

24. **Zubair, L.**, G. Galapaththy, H. Yang, J. Chandimala, Zeenas Yahiya, P. Amerasinghe, MN Ward, SJ Connor, 2009, Potential use of El Niño for malaria early warning in Sri Lanka, *Malaria Journal*, 7:140.
25. Briet, OJT, GNL Galapaththy, **L Zubair**, P Vounatsou, 2006, Rainfall as predictor of malaria in Sri Lanka, *EUROPEAN JOURNAL OF EPIDEMIOLOGY*, 21, 45, 2006

ENVIRONMENT AND SOCIETY

26. **Zubair, L.**, 2005, Modernization of Sri Lanka's Traditional Irrigation System and Sustainability, *Science, Technology and Society*, 10 (20): 161-195.
27. **Zubair, L.**, 2003, Development of Meteorological Studies in Sri Lanka, *Journal of the Institute of Engineers, Sri Lanka*, 35 (2): 14-18, 2002
28. **Zubair, L.**, 2002, An Assessment of Environmental Impact Assessment in Sri Lanka, *Environmental Impact Analysis Review*, 21(5): 469-478.

FLUID DYNAMICS

29. **Zubair, L.**, 1995, Characterization of Intermittency in Turbulence, *Physics of Fluids*, 7 (8) pp. 2089.
30. **Zubair, L.**, K.R. Sreenivasan and M.V. Wickerhauser, 1991, *Compression of turbulence data and images using wavelet-packets*, In Studies in Turbulence, Springer-Verlag, eds. T. Gadsby, S. Sirkar and C. Speziale. pp. 489-513.

TERTIARY EDUCATION AND CAPACITY BUILDING

31. **Zubair, L.**, 2009, Engendering Multi-disciplinarity and Quality: Environmental Education at the University of Peradeniya, Chapter 2, In *Ed. N. Hennanayake et al.* Traversing No Mans Land, University of Peradeniya, 2009, ISBN 978-955-30-1526-6.
32. **Zubair, L.**, 2004, Towards Developing Weather and Climate Prediction for Sri Lanka, *Journal of the Institute of Engineers, Sri Lanka*, XXXVII, 2:53-58.

33. **Zubair, L.**, 2004, *Weather and Climate in Sri Lanka: A Reference Guide*, Natural Resources Management Services, Kandy, Sri Lanka ISBN 955-8968-00-5.

Popular Publications

Websites for publications where available are listed:

- ❖ Newspapers:
 - New York Times (<http://www.nytimes.com>),
 - Yale Daily News (<http://www.yaledailynews.com/>)
 - The Island (<http://www.island.lk>),
 - Daily Mirror (<http://www.mirror.lk>),
 - Ceylon Daily News (<http://www.dailynews.lk>),
 - Sunday Observer (<http://www.sundayobserver.lk>)
- ❖ Magazines:
 - TIEMPO, UK, (<http://www.cru.uea.ac.uk/tiempo/>)
 - LINES, New York, (<http://www.lines-magazine.org/>)
 - FRONTIER MAGAZINE, Japan (<http://www.jamstec.go.jp/frcgc/eng/publications/>)

Climate

- Dec 5, 2007: *The Language of Climate in Sri Lanka*, **The Island**.
- July 2004: [Empowering the Vulnerable](#), **TIEMPO**, 52:3-6, University of East Anglia, UK, [pdf version](#)
- Aug 2002, *Saving Weather Data*, **TIEMPO**, 49:16-22, University of East Anglia, UK.
- May 2002: [Questions for Climate Science from the Mahaweli Water Managers](#), **Frontier Newsletter**, Volume 19.
- June 2002: *Climate Change and National Security*, **The Island**, June 22, 2002.
- August 2001: FAQ on “Drought in Sri Lanka” published in **Lanka Academic** Website.
- December 2001: Essay on “Cricket and Climate in Sri Lanka”, **Ceylon Daily News**.

Environment and Development

- August 2005: *Sethusamudaram Canal: Sri Lanka and Tamil Nadu at risk*, **Daily Mirror**, 1 August, 2005, **The Island**, 5 October 2005.
- August 2004, *Hazards from excavating the Palk Straits for Shipping*, **The Island**, 5 August, 2004.
- May 1999: *Lessons for South Asia from Nuclear Deterrence in the West*, **Pugwash Conference on Science and Ethics in the New Millennium**, San Diego, California.
- April 1999: *Hazards for Tamil Nadu and Sri Lanka from the excavation of the Palk Straits*, **Ceylon Daily News**, 07-04-99 and **Island**, 29-03-1999.
- May 1997: *Visions of Development*, **Vortex Magazine**, Faculty of Engineering, University of Peradeniya.
- March 1993: *An illusion of prosperity in Ghana*, **New York Times**.

Technology

- April 1999: *Windmills and Trojan Horses*, **Sri Lanka Engineering Newsletter** and **Peradeniya Engineering Faculty Alumni Association Newsletter**.
- January 1998: *Traditional Chemical Technology in Sri Lanka: Learning from John Davy*, **Cheminique**, University of Moratuwa.
- June 1989: *Technology and development in under-developed countries: the case of Chemical Technology in Sri Lanka*, **Student Pugwash Panel on Technology, Development and the Environment**. Boulder.
- May 1986: *The future of the urea plant in the balance*, **The Island**.

Energy

- May 2002: *Why Government Institutions fail to Conserve Energy*, **The Island**, May 27, 2002.
- August 2002: *Conserving Energy at Home*. **Ceylon Daily Mirror**, August 08, 2002
- October 1997: *Energy Audit of the University of Peradeniya*, **Cheminique**, University of Moratuwa.
- August 1996: *Conservation as an energy source*, **Ceylon Daily News**, August 19, 1996.

University Education

- May 1999: *Plagiarism in the Faculty of Engineering*, **Peradeniya Engineering Faculty Alumni Association Newsletter**.
- Dec 1998: *The Study of Motion at Peradeniya*, **Sri Lanka Engineering Newsletter**.
- March 1998: *Why Some Students at Peradeniya Rag*, **Ceylon Daily News**.
- March 1998: *Ragging at Peradeniya: the harsh truths*, **Ceylon Daily News**.
- July 1995: *Laced with Wit and Wry Humour: A Review of the History of the Faculty of Engineering, University of Peradeniya, 1951-71*, **Sunday Observer**.
- November 1991: *Restructuring Engineering at Yale*, **Yale Daily News**.

Tsunami

- March 2005: *Science, Disaster Management and the Tsunami in Sri Lanka*, International Centre for Theoretical Physics, Trieste, Italy, **ICTP webcast**.
- February 2005: *The geography of vulnerability and destruction*, **Lines Magazine**
- August 2005: *Six Months On –An Editorial from the GeoLanka/RecoverLanka administrators*, **The Island**, 5 August 2005.
- January 2005: *The Tsunami, Science and Disaster Management*, **The Island**, 27 January.
- Team Leader for many features in Tsunami Relief, Recovery and Reconstruction Websites that were widely cited and accessed.

Editorial and Review Service

Editor

Associate Editor: ASCE Journal of Energy Engineering - 2007 to 2013

Reviewer

Environmental Science and Technology	Journal of Climate
Experimental Thermal and Fluid Science	Journal of Geophysical Research
Geophysical Research Letters	Journal of Hydrology
Hydrological Processes	Journal of Hydrometeorology
Climatic Research	Water Resources Research
International Journal of Climatology	Pure and Applied Geophysics

Professional Associations and Service

American Society of Civil Engineers, American Association of Environmental Engineering Professors, American Meteorological Society, American Geophysical Union, Indian Meteorological Society, Agronomy Society of America, International Association for Ecology & Health, American Institute for Sri Lankan Studies. Asian Network for Climate Science and Technology, Institute of Engineers, Sri Lanka, Sri Lanka Association for the Advancement of Science. *Founder*: Sri Lanka Meteorology, Oceanography and Hydrology Network.