

CURRICULUM VITAE

Dr. Nasreen Akter

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PERSONAL INFORMATION:

- **Permanent Address:** House 21, Road 6, Sector 13, Uttara, Dhaka-1230
- **Nationality:** Bangladeshi
- **Date of Birth:** 16 November 1973

ACADEMIC BACKGROUND:

- **Degree:** Ph. D, 2010
Institute: HyARC, Graduate School of Environmental Studies, Nagoya University, Japan
Area of Specialization: Meteorology
Title of the dissertation: Numerical study of an outer rainband and its convective cells associated with Cyclone Sidr
- **Degree:** Master of Philosophy, 2007
Institute: Bangladesh University of Engineering & Technology, Dhaka
Area of Specialization: Atmospheric Physics
Title of the dissertation: Sensitivity test of different cumulus parameterizations in MM5 modelling for Bangladesh
Achievement: A grade (GPA **3.92**)
- **Degree:** Master of Science in Physics, 1999 (held in 2001)
Institute: University of Dhaka, Bangladesh
Area of Specialization: Physics
Title of the dissertation: Development of user-friendly software for acquisition of spirometric data
Achievement: 1st Class (1st Position)
- **Degree:** Bachelor of Science in Physics, 1995 (held in 1997)
Institute: University of Dhaka, Bangladesh
Achievement: 1st Class (2nd Position)

EXPERIENCES:

- **Professor**, Department of Meteorology, University of Dhaka, Part time faculty from January 2019 onwards
- **Visiting Professor**, ISEE, Nagoya University, Japan from 01 July 2018 to 30 September 2018
- **Professor**, Department of Physics, Bangladesh University of Engineering & Technology (BUET), Dhaka from August 2016 onwards
- **Professor**, Department of Oceanography, University of Dhaka, Part time faculty from July 2016 to June 2018.
- **Associate Professor**, Department of Oceanography, University of Dhaka, Part time faculty from January 2015 to June 2016.
- **Associate Professor**, Department of Physics, Bangladesh University of Engineering & Technology (BUET), Dhaka from September 2013 to August 2016.
- **Assistant Professor**, Department of Physics, Bangladesh University of Engineering & Technology (BUET), Dhaka from August 2007 to September 2013.
- **Lecturer**, Department of Physics, Bangladesh University of Engineering & Technology (BUET), Dhaka from December 2004 to August 2007.
- **Lecturer**, Department of Mathematical and Natural Science, BRAC University, Dhaka from January 2003 to November 2004.

AWARDS RECEIVED:

- ❖ **University Grant Commission (UGC) Award 2014** for the research paper titled "Role of Synoptic-Scale Forcing in Cyclogenesis over the Bay of Bengal"
- ❖ **Monbukagakusho Scholarship** for Ph.D program in Meteorology at Nagoya University, Japan, during the academic years 2007-2010
- ❖ **Dhaka University Merit Award** for being 1st position in Master of Science

RESEARCH INTEREST:

- Tropical Cyclone meteorology
 - Recurving of TC formed in the Bay of Bengal (BoB)
 - Cyclogenesis over the Bay of Bengal
 - Rainband formation process
 - Convective cells' characteristics in the rainband of TC
 - Vertical structure of bimodal cyclones over the BoB
 - Environmental effect on cyclone intensity

- Aerosol over South Asia including North Indian Ocean
- Dryline characteristics and formation during Pre-monsoon season
- Seasonal variability of thunderstorm and lightning activities

COURSES BEING TAUGHT:

- **For undergraduate students (BUET):** Physics (Electricity and Magnetism, Waves and Oscillations, Optics, Heat and thermodynamics, Properties of Matter, Modern Physics)
- **For Post graduate students (BUET):** Basic Atmospheric Physics, Climatology, Monsoon Meteorology, Tropical cyclone, Dynamic Meteorology, Atmospheric Modeling and data assimilation.
- **For undergraduate students (Oceanography Dept., Dhaka University):** Basic Atmospheric Science, Marine Meteorology.
- **For Post graduate students (Meteorology Dept., Dhaka University):** General circulation of Atmosphere

POST GRADUATE STUDENTS SUPERVISION:

- **Thesis supervision completed: 07 M. Sc, 01 M. Phil**
- **Ongoing supervision: 06 M. Sc, 02 M. Phil and 03 Ph. D**

PUBLICATIONS:

Peer-reviewed Journals:

1. **N. Akter** and K. Tsuboki 2017: Climatology of the premonsoon Indian dryline, *International Journal of Climatology*, 37, 3991-3998.
2. N. Naher and **N. Akter**, 2017: Variability of Low-Level Moisture Flux and Its Relation With Precipitation. *The Atmosphere*, 7(1), 39-46.
3. **N. Akter** , 2017: An overview of tropical cyclone formation over the Bay of Bengal. *Bangladesh Maritime Journal*, 1, 99-111.
4. M. A. Amin and **N. Akter**, 2016: The variation of sea salt aerosol over North Indian Ocean including Bangladesh and its impact, *The Atmosphere*, 6(1), 84-89.
5. M. Paul and **N. Akter**, 2016: The effect of atmospheric variables on soil moisture over Bangladesh, *The Atmosphere*, 6(1), 58-63.

6. **N. Akter**, 2015: Mesoscale convection and bimodal cyclogenesis over the Bay of Bengal. *Monthly Weather Review*, 143, 3495-3517.
7. **N. Akter** and K. Tsuboki, 2014: Role of synoptic-scale forcing in cyclogenesis over the Bay of Bengal. *Climate Dynamics*, 43, 2651-2662.
8. **N. Akter** and K. Tsuboki 2012: Numerical simulation of cyclone Sidr using cloud resolving model: characteristics and formation process of an outer rainband, *Monthly Weather Review*, 140, 789-810.
9. **N. Akter** and K. Tsuboki, 2010: Characteristics of supercells in the rainband of numerically simulated cyclone Sidr. *Scientific Online Letters on the Atmosphere (SOLA)*, 6A, 25-28.
10. **N. Akter** and M. N. Islam, 2009: Employment of MM5 in simulating MCSs developed in and around Bangladesh. *Mausam*, 60(2), 137-146.
11. **N. Akter** and M. N. Islam, 2007: Use of MM5 model for weather forecasting over Bangladesh region. *BRAC University Journal*, IV(1), 75-79.
12. **N. Akter**, M. N. Islam, T. Terao and T. Hayashi, 2007: Selection of parameterization in MM5 for the estimation of rainfall in Bangladesh. *Bangladesh Journal of Physics*, 3, 75-83.
13. **N. Akter**, M. N. Islam and M. Rafiuddin, 2007: Retrieval of rain rate from the rain status of BMD radar. *The Atmosphere*, 3, 24-30.
14. **N. Akter** and K S Rabbani, 2004: Interfacing Arrangement and Software Development for Acquisition and Analysis of Respiratory Data, *BRAC University Journal*, 1, 99-107

Conference Proceedings / Presentation:

1. M. R. Rari and **N. Akter**, 2019: Numerical study of mesoscale convective systems for recurving cyclone Madi and non-curving cyclone Phailin formed over the Bay of Bengal in 2013 using WRF model, International (SAARC) Youth Scientific Conference (IYSC), 5-6 June 2019, Tribhuvan University, Kathmandu, Nepal.
2. S. Sultana and **Nasreen Akter**, 2019: Concentrations of black carbon and sulphate aerosols and their warming and cooling effects in and around Bangladesh, National Conference on Physics, Bangladesh Physical Society, 7-9 February 2019, Department of Physics, University of Dhaka, Dhaka.
3. M.S. Sudha and **Nasreen Akter**, 2019: The environment for non-developing tropical cyclones over the Bay of Bengal, National Conference on Physics, Bangladesh Physical Society, 7-9 February 2019, Department of Physics, University of Dhaka, Dhaka.

4. A. T. M. Shafiul Azam, M Rafiuddin, **Nasreen Akter** and Ashraf Dewan, 2019: Relation between lightning flash and atmospheric aerosol over Bangladesh, National Conference on Physics, Bangladesh Physical Society, 7-9 February 2019, Department of Physics, University of Dhaka, Dhaka.
5. **N. Akter** and K. Tsuboki, 2018: Mesovortex formation for dryline-related cyclogenesis over the Bay of Bengal during premonsoon, International workshop on Extreme Severe Storms and Disaster Mitigation Strategy, 24-26 Dec 2018, Department of Atmospheric Science, Central University of Rajasthan, India.
6. **N. Akter**, 2018: Cyclogenesis and its unique characteristics over the Bay of Bengal, invited talk, International Conference on Physics, Bangladesh Physical Society, 8-10 March 2018, University of Dhaka, Dhaka.
7. M. R. Rari and **N. Akter**, 2018: Investigation of Mesoscale Convective Systems for Cyclone Madi Formed over the Bay of Bengal in 2013, International Conference on Physics, Bangladesh Physical Society, 8-10 March 2018, University of Dhaka, Dhaka.
8. **N. Akter**, 2017: Bimodal cyclogenesis and associated convection over the Bay of Bengal, workshop on Marine Disaster Forecasting, 18 September 2017, CARS, University of Dhaka.
9. **N. Akter**, 2017: Climatology of Indian dryline and its effect on cyclogenesis over the Bay of Bengal, International workshop for climate variability and related studies over North East Indian subcontinent, 21-22 February 2017, Nagoya University, Japan.
10. **N. Akter**, 2017: Variability of Sea Salt Aerosol over the North Indian Ocean and Its Impact on atmosphere, Seminar for Current research on atmospheric phenomena and climate associated with disasters in South Asia, 20 February 2017, Wind Engineering - Joint Usage Research Center (WE-JURC), Tokyo, Japan.
11. D. Banik and **N. Akter**, 2017: Spatio-temporal variability of dust aerosol in and around Bangladesh, International Conference on Physics, Bangladesh Physical Society, 5-7 January 2017, Atomic Energy Centre, Dhaka.
12. S.Y. Hima and **N. Akter**, 2017: Recurving of tropical cyclones over the Bay of Bengal, International Conference on Physics, Bangladesh Physical Society, 5-7 January 2017, Atomic Energy Centre, Dhaka.
13. N. Naher and **N. Akter**, 2016: Transport of Low Level Moisture in South Asia. International Conference on Physics, Bangladesh Physical Society, 10-12 March 2016, Atomic Energy Centre, Dhaka.
14. M. A. Amin and **N. Akter**, 2016: Seasonal Variability of Sea-Salt Aerosol over North Indian Ocean. International Conference on Physics, Bangladesh Physical Society, 10-12 March 2016, Atomic Energy Centre, Dhaka.
15. M. Paul and **N. Akter**, 2016: Long-Term Variability of Soil Moisture over Bangladesh. International Conference on Physics, Bangladesh Physical Society, 10-

12 March 2016, Atomic Energy Centre, Dhaka.

16. **N. Akter**, 2015: Characteristics of Seasonal Dryline along the East Coast of India. AOGS2015 - 12th Annual Meeting and APHW conference, 2-7 August 2015, Suntec, Singapore.
17. **N. Akter**, 2015: Characteristics of Mesoscale Convective Systems for Pre-monsoon Cyclones in the Bay of Bengal. AOGS2015 - 12th Annual Meeting and APHW conference, 2-7 August 2015, Suntec, Singapore.
18. **N. Akter**, 2015: Cyclogenesis during Pre- and Post-monsoon Seasons over the Bay of Bengal. Technical Program, 23 March 2015, Bangladesh Abhawa Karmokarta Parishad (BAKP), BMD, Dhaka.
19. **N. Akter** 2015: Verify the monsoon forecast during onset/withdrawal phases based on the data provided (21st May IC and 05 Sep IC). Devise criteria for monsoon onset based on tropospheric temperature, Targeted Training Activity (TTA): Modelling and Prediction of Asian Monsoons: Improving Physical Processes, 9-20 March 2015, ICTP-IITM-COLA, Pune, India.
20. **N. Akter** and K. Tsuboki, 2013: Cyclogenesis During Pre- and Post-monsoon Seasons Over the Bay of Bengal. AOGS2013 – 10th Annual Meeting and Geosciences World Community Exhibition 24 – 28 June 2013, Brisbane, Australia.
21. Sk. Md. A. Abdullah and **N. Akter**, 2013: Variations of AOD in and Around Bangladesh Using MACC Reanalysis Data. AOGS2013 – 10th Annual Meeting and Geosciences World Community Exhibition 24 – 28 June 2013, Brisbane, Australia.
22. Sk. Md. A. Abdullah, **N. Akter** and M. M. Rahman, 2013: Variations in Aerosol Distributions in and Around Bangladesh. *Fifth Symposium on Aerosol-Cloud-Climate Interactions*, AMS 93rd Annual Meeting, 6-10 January 2013 in Austin, TX.
23. M. M. Rahman and **N. Akter**, 2013: Variations in aerosol distributions over SAARC regions by using RegCM. *Nucleation and Atmospheric Aerosols*, AIP Conf. Proc. 1527, 683-687 (2013); doi: 10.1063/1.4803363.
24. **N. Akter** , M. M. Rahman, Asfaq and Ismail, 2012: Sensitivity of Aerosols Over the South Asia. Project presentation, 6th ICTP workshop on the theory and use of REGional Climate Model, 7-18 May 2012, ICTP, Italy.
25. **N. Akter** and K. Tsuboki, 2009: High Resolution Numerical Simulation of Convective Cells in the Rainband of Cyclone Sidr. *Fourth Japan-China-Korea Joint Conference on Meteorology*, 8-10 November 2009, Tsukuba, Japan, pp 148.
26. **N. Akter** and R. kabir, 2007: Statistical downscaling and validation of general circulation model for Bangladesh region. Project presentation, Targeted Training Activity: Seasonal Prediction of South Asian Monsoons, 6-10 August 2007, ICTP, Italy.
27. **N. Akter** and K. Tsuboki, 2008: Numerical Study on Rainband of Cyclone Sidr

Using a Cloud Resolving Model. *Preventing Typhoon Disasters- Building Bridges Across Meteorology, Wind Engineering, Civil Engineering, and Disaster Informatics*, 17-18 December 2008, Disaster Prevention Research Institute, Kyoto University, Japan, 74-77.

28. **N. Akter** and K. Tsuboki, 2008: Simulation of Cyclone Sidr and Analysis of the Rainband Formation Using CReSS. *Autumn Meeting of the Meteorological Society of Japan*, 19-21 November 2008, Sendai, Japan, pp 115.
29. **N. Akter** and Islam M. Nazrul, 2007: MM5 modelling to simulate pre-monsoon convective systems developed over Bangladesh. Annual Conference, Bangladesh Physical Society, 05-06 May 2007, BUET, Dhaka.
30. Islam M. Nazrul, **N. Akter**, A. U Ahmed and T. Hayashi, 2007: A method to use RCM generated climate scenarios in application to water related issues in Bangladesh. AOGS07, 31 July-04 August 2007, Bangkok, Thailand.
31. **N. Akter** and Islam M. Nazrul, 2007: MM5 modelling to simulate pre-monsoon convective systems developed over Bangladesh. Annual Conference, Bangladesh Physical Society, 05-06 May 2007, BUET, Dhaka.
32. **N. Akter** and K S Rabbani, 2004: Computerisation of a Wedged Bellows Spirometer for the Acquisition and Analysis of Respiratory Data, International Conference on Physics for Understanding and Applications held from 22-24 February 2004.
33. Islam M. Nazrul, **N. Akter**, T. Hayashi, T. Terao and J. Matsumoto, 2006: Precipitation systems in and around Bangladesh: Some preliminary results and Problems to solve, IMSSC meeting, 19-20 October 2006, Bangkok, Thailand.
34. Islam M. Nazrul and **N. Akter**, 2006: Mesoscale Model to Simulate Convective Systems in Bangladesh. Observance of SAARC Charter Day, 8 December 2006, SMRC Bhaban, Dhaka.

TRAINING/WORKSHOPS:

- **Training Workshop on Quality Assurance in Outcome Based Education**, Institutional Quality Assurance Cell (IQAC), BUET, 18 August 2016.
- **ICTP-IITM-COLA Targeted Training Activity: Modelling and Prediction of Asian Monsoons: Improving Physical Processes**, IITM, Pune, Indian, 9 – 20 February, 2015.
- **6th ICTP Workshop on the theory and use of Regional climate models**, ICTP - Trieste, Italy, 7-18 May, 2012.
- **Numerical Prediction of High-Impact Weather Systems**, Organized by Water Science Unit of UNESCO Office Jakarta and the Institute of Hydrospheric Atmospheric Sciences of Nagoya University, 2-15 December 2007, Nagoya, Japan.

- **Targeted Training Activity: Seasonal Prediction of South Asian Monsoons**, ICTP - Trieste, Italy, 6 -10 August, 2007.
- **Use of Linux in Everyday life**, workshop organized by Department of CSE, Bangladesh University of Engineering & Technology (BUET) , 7-9 April 2007.
- **Teachers` Appreciation Workshop**, Organized by Directorate of Continuing Education, Bangladesh University of Engineering & Technology (BUET) , 18-19 March 2006, Dhaka, Bangladesh.
- **Computer Application Course (FOXPRO PROGRAMING)** Organized by Computer Centre, Bangladesh University of Engineering & Technology (BUET), 23 August -23 October 1997, Dhaka, Bangladesh.

JOURNAL REVIEW:

Review of articles for the following journals:

1. PLOS ONE - Public Library of Science, USA
2. Earth Interactions – American Meteorological Society
3. Climate Dynamics – Springer
4. Earth system and environment – Springer
5. Pure and Applied Geophysics – Springer
6. International Journal of Integrated Sciences & Technology (IJIST)
7. Bangladesh Journal of Physics, Bangladesh Physical society
8. Journal of Engineering Science (JES)