

INDIAN INSTITUTE OF TROPICAL METEOROLOGY, PUNE



THE THIRTY-FIRST SILVER JUBILEE AWARD FOR THE YEAR 2018

To commemorate the Silver Jubilee of the Institute, the Governing Council instituted, an Annual Silver Jubilee Award for the best research contribution in the form of published paper in standard research journal by the Institute's scientist(s). The award presently carries a cash reward of ₹. 25,000/- and a citation.

The Thirty-first Silver Jubilee Award for the year 2018 is awarded for the paper entitled

“Phenomenological paradigm for midtropospheric cyclogenesis in the Indian summer monsoon”

*Published in the Journal of Atmospheric Sciences, 75, September 2018,
DOI:10.1175/JAS-D-17-0356.1, 2931-2954*

by

Ayantika Dey Choudhury, R. Krishnan, M.V.S. Ramarao, R. Vellore, M. Singh and B. Mapes.

Abstract

This study provides a dynamical and predictive understanding of the formation of heavily precipitating mid-tropospheric cyclonic (MTC) systems occurring over west coast of India during the summer monsoon season. Observations show that these events co-occur with broader-scale monsoon evolution, including larger synoptic-scale low-pressure systems over the Bay of Bengal and east coast, and the active phase of regional-scale poleward-propagating intra-seasonal rain-belts, with associated drying north of the convectively active area. Diabatic heating composites, estimated from satellite observations and reanalysis products, are used to drive a nonlinear multilayer dynamical model in a forced-damped reconstruction of the global circulation. Results reveal that the midlevel cyclonic circulation events are mainly attributable to the top-heavy latent heating, indicative of the prevalence of stratiform-type precipitation in mesoscale convective systems in these moist, active larger-scale settings.

This citation is presented to

Ayantika Dey Choudhury

in recognition of her contribution to the above research paper.

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This citation is presented to

R. Krishnan

in recognition of his contribution to the above research paper.

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This citation is presented to

M.V.S. Ramarao

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This citation is presented to

R. Vellore

in recognition of his contribution to the above research paper.

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This citation is presented to

M. Singh

in recognition of his contribution to the above research paper.

INDIAN INSTITUTE OF TROPICAL METEOROLOGY, PUNE



PROF. R. ANANTHAKRISHNAN AWARD FOR THE BEST PH.D. THESIS (2018)

To encourage and inspire Ph.D. students, IITM has instituted, Prof. R. Ananthakrishnan Award for the best Ph.D. thesis by a Ph.D. student of this Institute.

The award presently carries a cash reward of ₹. 50,000/-, a gold medal and a citation.

Prof. R. Ananthakrishnan Award for the year 2018 is awarded for the Ph.D. thesis entitled

“Study of Aerosol Effects on Deep Convective Clouds within Monsoon Environment Based on Observations and Numerical Modeling”

by

Gayatri Kulkarni

The thesis gives insights into the aerosol cloud interactions in deep convective clouds over the Indian region. The main aim of the thesis is to gain a better understanding of aerosol effects on mixed phase clouds in different environmental conditions and the processes that primarily contribute to the invigoration of convective clouds. Robust inter-comparisons of Bin and Bulk microphysical schemes with observations suggested that the Bin microphysics scheme is more appropriate to evaluate aerosol-cloud-precipitation interactions. For the first time, inter-comparison of cloud and particle size distribution from in situ CAIPEEX observations and numerical simulations was performed over the Indian region. The results highlight the complex interactions between thermodynamics and different microphysical processes and their sensitivity to the initial aerosol concentrations. The presence of the Hallet-Mossop process was found to be instrumental in the development of ice, snow, and graupel mass in these clouds. A mechanism for the cloud invigoration in single cloud and cloud clusters is illustrated based on several case studies and detailed analysis and inter-comparison with observations.

This citation is presented to

Dr. Gayatri Kulkarni

in recognition of her contribution to the above thesis.

INDIAN INSTITUTE OF TROPICAL METEOROLOGY, PUNE



THE BEST STUDENT PAPER AWARD FOR THE YEAR 2018

To encourage and inspire students, IITM has instituted, an Annual Best Student Paper Award for the best research contribution in the form of published paper in standard research journal by Ph.D. Students of this Institute. The award presently carries a cash reward of ₹. 10,000/- and a citation.

The Best Student Paper Award for the year 2018 is awarded for the paper entitled

“Quantification of Observed Electrical Effect on the Raindrop Size Distribution in Tropical Clouds”

*Published in the Journal of Geophysical Research: Atmospheres, 123, April 2018,
DOI:10.1029/2017JD028205, 1-18*

by

Dipjyoti Mudiar, S.D. Pawar, Anupam Hazra, Mahen Konwar, V. Gopalakrishnan, M.K. Srivastava and B.N. Goswami

Abstract

In the backdrop of extensive and compelling laboratory and theoretical evidence of broadening of the drop size distribution (DSD) of raindrops in the presence of electric force, quantification of the same in tropical clouds was lacking. This is quantified using observed DSD spectra of some strongly and weakly electrified stratiform rain events observed over the HACPL, Mahabaleshwar. Observations have shown that electric forces can enhance the collision-coalescence growth of raindrops. The study suggests that, parameterization of electrical processes in numerical weather models can possibly improve the simulation of tropical rainfall.

This citation is presented to

Dipjyoti Mudiar

in recognition of his contribution to the above research paper.



Indian Institute of Tropical Meteorology

CERTIFICATE

This is to certify that *Ms. Rituparna Sarkar* has secured the first position in the two-semester Ph.D. course work conducted for the year 2018-19 by the Development of Skilled Manpower in Earth System Sciences (DESK), IITM, Pune.

IITM, Pune
November 17, 2019

Prof. Ravi S. Nanjundiah
Director



Indian Institute of Tropical Meteorology

CERTIFICATE

This is to certify that *Mr. Sandeep J.* has secured the second position in the two-semester Ph.D. course work conducted for the year 2018-19 by the Development of Skilled Manpower in Earth System Sciences (DESK), IITM, Pune.

IITM, Pune
November 17, 2019

Prof. Ravi S. Nanjundiah
Director

INDIAN INSTITUTE OF TROPICAL METEOROLOGY, PUNE



The Excellent Performance Award

To commemorate the Annual Foundation Day Celebrations, the Institute has established an Excellent Performance Award for each of the Scientific Support, Technical Support, Administrative and Multi Tasking Staff categories of employees.

Dr. Deewan Singh Bisht

Junior Scientific Officer

Receives this Award for his Excellent Performance in the year 2018 under the Scientific Support Staff Category.

IITM, Pune
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Prof. Ravi S. Nanjundiah
Director

INDIAN INSTITUTE OF TROPICAL METEOROLOGY, PUNE



The Excellent Performance Award

To commemorate the Annual Foundation Day Celebrations, the Institute has established an Excellent Performance Award for each of the Scientific Support, Technical Support, Administrative and Multi Tasking Staff categories of employees.

Smt. Yogita Kad

Deputy Manager

Receives this Award for her Excellent Performance in the year 2018 under the Administrative Staff Category.

IITM, Pune
November 17, 2019

Prof. Ravi S. Nanjundiah
Director

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Shri Sandip Kulkarni

Senior Executive

Receives this Award for his Excellent Performance in the year 2018 under the Administrative Staff Category.

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Director

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The Excellent Performance Award

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Shri Rakesh Bhandari

Multi Tasking Staff

Receives this Award for his Excellent Performance in the year 2018 under the Multi Tasking Staff Category.

IITM, Pune
November 17, 2019

Prof. Ravi S. Nanjundiah
Director