Bio-data

1. Name : **Madhavan Nair RAJEEVAN**

2. Date of Birth : 27 July 1961

3. Present Affiliation : **Secretary**
Ministry of Earth Sciences
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6.Education: : M.Sc (Physics), Ph.D (Physics)

7. Important Positions held:

Years	Institution	Position held
December 1983-August1985	Tata Institute of Fundamental Research (TIFR), Mumbai	Senior Scientific Assistant IR Astronomy Group
September 1985-June 2008	Meteorological Centre Ahmedabad and National Climate Centre, India Meteorological Department, Pune	Meteorologist / Director of the National Climate Centre
July 2008-January 2012	National Atmospheric Research Laboratory, Department of Space,Tirupati	Senior Scientist, Scientist-F
February 2012-02 March 2015	Ministry of Earth Sciences, Government of India, New Delhi	Scientist-G/Adviser
03 March 2015-06 December 2015	Indian Institute of Tropical Meteorology, Pune	Director
07 December 2015- till date	Ministry of Earth Sciences	Secretary

8. Research specialization:

- Monsoon Variability and Monsoon Prediction
- Climate Change and Extreme Weather Events
- Prediction of Mesoscale Convective Systems
- Cloud-Radiation Interactionand Satellite applications
- Aerosol Radiative Forcing.

9. Present research interests:

- Monsoon prediction using coupled models, decadal variability and prediction
- Land surface processes and monsoon predictability (role of land surface processes on monsoon variability and prediction)
- Extreme climate events (variability and prediction of extreme events like heavy rainfall events, droughts and heat waves).

10. Important Scientific Contributions:

- Contributed significantly for developing many application tools and prediction models for societal applications like long-range prediction models, gridded climate data sets and many other climate application products for regional climate services. **These models and application tools are being used by the India Meteorological Department for operational use.**
- Development of advanced statistical prediction models for operational long range forecasts of monsoon seasonal rainfall (over India and four homogeneous regions) and the monsoon onset over Kerala.
- Diagnostic studies on the Inter-annual variability of southwest and northeast monsoons (tele-connections) and associated physical processes.
- Development of objective criteria for declaring the monsoon onset over Kerala and monitoring the active and break spells of the Indian summer monsoon.**These criteria are being used by the India Meteorological Department for operational use.**
- Development of high resolution climate data sets like the high resolution gridded rainfall and temperature data sets. These data sets are extensively used by researchers around the Globe. **There are more than 750 citations on these data sets**.
- Analysis of extreme climate events (intense precipitation events, monsoon droughts and heat waves) and understanding physical processes.
- Understanding and development of prediction tools for Mesoscale weather systems over southeast India. Development of advanced prediction tool using hybrid method

(dynamical and statistical) for prediction of thunderstorms and associated lightning over the SHAR (ISRO rocket launching site), which is being used by the ISRO for predictions.

- Role of land surface processes on monsoon variability using observations and regional climate models, development of a high resolution land surface data set for applications on hydrology.
- Analysis of active and break spells of the Indian monsoon, criteria for definition and its dynamics, extensively cited and used by researchers for studies on active and break spells of the Monsoon.
- Analysis of three dimensional structure of clouds and its variability over the monsoon region using advanced satellite data sets.
- Analysis of cloud-radiation interaction and cloud radiative forcing over the monsoon region using various satellite data sets. First time shown that cloud-radiation feedback is negative over the Asian Monsoon region.
- Evaluation and understanding of predictability of the Indian monsoon in coupled climate models.

11. Awards:

- 2001 **START Young Scientist** Award for the paper "Net cloud radiative forcing at the top of atmosphere in the Asian monsoon region" published in **Journal of Climate**, 2000, 13, 650-657.

- Award for the **Young Scientist** in Atmospheric Sciences by the Ministry of Earth Sciences (MOES), New Delhi in 2007 for the research contributions in Atmospheric Sciences.

- 20th**Biennial Mausam Award (2001)**, Department of Science and Technology, for the paper "Aerosol-Cloud-Climate Effect: Study with a radiative transfer model" published in **Mausam**, April 1998, 49,195-202.

12. Honours and Recognitions:

- Fellow of the Indian Academy of Sciences (IASc)
- Fellow of the Indian National Science Academy (INSA)
- Fellow of the National Science Academy of India (NASI)
- Member, International Academy of Astronautics (IIA)
- High-level Adviser on Climate Services for the Commission on Climatology (CCl) of the World Meteorological Organization (WMO)
- Member of the International WCRP CLIVAR (UN Organization) Asian-Australian Monsoon Panel (AAMP) (2007-2012)
- Chairman, Council of the Regional Integrated Multi-Hazard Early Warning System (RIMES) For Africa and Asia, Bangkok.
- Honorary Doctorate from GITAM University, Vishakapatnam

- Chairman, Research Council, National Institute of Oceanography (NIO), Goa
- Member, Governing Council of IISER Pune, IISER Tirupati and IISER Kolkata
- Senior Associate, International Centre for Theoretical Physics (ICTP), Trieste, Italy, 2007-2013
- Expert Member in the World Meteorological Organization (WMO) international panel on Climate Services Information System (CSIS) under the Global Framework on Climate Services (GFCS) (Since 2012)
- Consultant to WMO to prepare the WMO Annual Climate Statement on the Status of Global Climate (in 2004 and 2005), only Asian to get this honour.
- Associate Editor, Journal of Earth System Sciences, Indian Academy of Sciences, Bangalore, a Springer Publication (2007-2015).
- Associate Editor, Weather and Climate Extremes, Elsevier publication
- Member, WMO CBS expert panel on long range forecasting, 2004-2008.
- Chairman, Expert Team constituted by the ISRO on New Meteorological Satellite Systems and Applications.

13. Academic Activity:

- Ph.D Research Guide at the University of Pune, Andhra University and S.V.University, Tirupati.Guided 9 Ph.D students, 5 M Tech students, and 10 M.Sc students for their research studies(list of the Ph.D students given below).

Details of Ph.D students completed:

S No	Name	Year	Title of the thesis	University
1	R.K.Yadav	2006	Variability of Winter Precipitation Over North- West India: Teleconnections and Long Range Forecasting	University of Pune
2	Pankaj Kumar	2006	Northeast Monsoon Rainfall Variability over India: Teleconnections and Long-Range Prediction	University of Pune
3	G. Krishna Kumar	2007	Impacts of Sea Surface Temperatures over the Indian Ocean on the Indian Monsoons-with a special reference to recent El Nino	University of Pune
4	S. Balachandran	2007	Surface Radiative Budget and its Relationship With Cloud Properties over the Globe : An Analysis Of Satellite Data"	University of Pune
5	A.K.Srivastava	2011	Role of extra tropical circulation features in modulating Indian Summer Monsoon rainfall	University of Pune

6	C.K.Unnikrishnan	2014	A study on role of Land Surface Processes on the Indian Summer monsoon variability using a regional climate model	S.V.University Tirupati
7	A Madhulatha	2015	Numerical Simulation of Mesoscale Convective Systems and Development of prediction schemes	Andhra University
8	Sreekala P.P.	2017	Northeast monsoon rainfall variability over south peninsular India in IPCC-AR5 models	S.V.University, Tirupati
9	KarunaSagar	2017	Studies on Rainstorms over India : Observations and Predictability	S.V.University, Tirupati

14. **Research papers in peer reviewed journals:**

Summary of research papers (**Source: Google scholar as on 05 August 2017**)

Peer-reviewed publications: 107
Proceedings of Conferences: 15
Total citations: 4169
h-Index: 34
i-10 index: 72

15. List of Peer reviewed research papers

1. Winter Fog Experiment over the Indo-Gangetic Plains of India, Sachin Ghude et al, 2017, **Current Science**, 112, 767-784.
2. Performance of the operational and experimental long-range forecasts for the 2015 southwest monsoon rainfall, Pai.D.S., Suryachandra Rao, A., Senroy, S., Pradhan, M., Pillai, P.A., and **M Rajeevan**, 2017, **Current Science**, 112, 68-75.
3. Improved prediction of severe thunderstorms over the Indian monsoon region using high-resolution soil moisture and temperature initialization, Osuri, K.K., Nadimpalli, R., Mohanty, U.C., Chen, F., **M Rajeevan**, Niyogi, D., 2017, **Scientific Reports**, 7, Article Number 41377, doi: 10.1038/srep41377
4. Past and future trends of hydroclimatic intensity over the Indian monsoon region, Mohan, T.S. and M Rajeevan, 2017, **J Geophysical Research (Atmospheres),** 122, 896-909.
5. Impact of different parameterization schemes on simulation of mesoscale convective system over south-east India, Madhulatha, A., **M Rajeevan**, 2017, **Met and Atmos Physics**, 1-17.
6. A study on the role of land-atmosphere coupling on the south Asian monsoon climate variability using a regional climate model, Unnikrishnan, C.K., **M Rajeevan** and VijayaBhaskara Rao, S., 2017, **Theoretical and Applied Climatology**, 127, 949-964.

7. On increasing monsoon rainstorms over India, KarunaSagar, S., M Rajeevan and Vijay Bhaskara Rao, 2017, **Natural Hazards**, 85, 1743-1757.
8. Atmospheric water budget over the South Asian summer monsoon region, Unnikrishnan, C.K., **Rajeevan, M.,** 2017, **Met and Atmos Physics**, 1-16.
9. Prediction of seasonal summer monsoon rainfall over homogenous regions of India using dynamical prediction system, Ramu, D.A., Rao.S.A., Pillai.P.A., Pradhan, M., George, G., Rao.D.N., Mahapatra, S., Pai, D.S., and **Rajeevan, M.,** 2017, **J.Hydrology**, 546, 103-112.
10. Anomalous Convective activity over sub-tropical east Pacific during 2015 and associated boreal summer monsoon teleconnections, M. Mujumdar, Sooraj, K.P., Krishnan, R., Preethi, B., Joshi, M.K., Varikoden, H., Singh, B.B., and **Rajeevan, M**., 2017, **Climate Dynamics,** 48, 4081-4091.
11. Potential of Collocated radiometer and wind profiler observations for monsoon studies, Balaji, B. Prabha, T.V. Jaya Rao, Y. Kiran, T. Dinesh, G. Chakravarty, K. Sonbawne, S. M., **M. Rajeevan**, 2017, **Atmospheric Research**, 194, 17-26.
12. Anomalous convective activity over sub-tropical east Pacific during 2015 and associated boreal summer monsoon teleconnections, Milind Mujumdar, KP Sooraj, R Krishnan, B Preethi, Manish K Joshi, Hamza Varikoden, Bhupendra B Singh, **M Rajeevan**, 2016, **Climate Dynamics**, DOI: 10.1007/s00382-016-3321-2.
13. How distinct are the two flavors of El Niño in retrospective forecasts of Climate Forecast System version 2 (CFSv2)?, Pillai, Prasanth A., Suryachandra A. Rao, Gibies George, D. Nagarjuna Rao, S. Mahapatra, **M. Rajeevan**, Ashish Dhakate, and Kiran Salunke, 2016, **Climate Dynamics**, DOI: 10.1007/s00382-016-3305-2
14. On the variability and increasing trends of heat waves over India, Rohini, P., **M.Rajeevan** and A.K.Srivastava, 2016, **Nature Scientific Reports**, Vol.6, **DOI:** 10.1038/srep26153
15. Anatomy of Indian heatwaves, Ratnam, J.V., S.K.Behera, S.B.Ratnam, **M. Rajeevan** and T.Yamagata, 2016, **Nature Scientific Reports**, Vol.6., **DOI:** 10.1038/srep24395
16. CMIP5 Projected Changes in the Annual Cycle of Indian Monsoon Rainfall, Pravat Jena, Sarita Azad, **M. Rajeevan**, 2016, **Climate**, doi:10.3390/cli4010014
17. Possible shift in the ENSO-Indian Monsoon rainfall relationship under future global warming, Azad, S., and **M. Rajeevan**, 2016, **Nature Scientific Reports**, Vol.6, **DOI:** 10.1038/srep20145
18. Extremes in June rainfall during the Indian summer monsoons of 2013 and 2014: Observational analysis and extended-range prediction, Joseph, S., A.K.Sahai, R.Chattopadhyay, S.Sharmila, S.Abhilash, **M.Rajeevan**, R.Mandal, A.Dey, N.Borah, 2016, R.Phani, **Quart.Roy.Met.Society**, 142, 1276-1289
19. Precipitation Climatology over India: Validation with observations and reanalysis datasets and spatial trends, Kishore, P., Jyothi, S., G.Basha, S.V.B.Rao, **M Rajeevan**, Velicogna, I., and T.C. Sutterley, 2016, **Climate Dynamics**, 46, 541-556
20. A study on the role of land-atmosphere coupling on the south Asian monsoon climate variability using a regional climate model, C.K.Unnikrishnan, **M. Rajeevan** and S.VijayaBhaskara Rao, 2015,**Theoretical and Applied Climatology**, DOI: 10.1007/s00704-015-1680-y

21. Role of vertical structure of cloud microphysical properties on cloud radiative forcing over the Asian monsoon region, Ravi Kiran, **M. Rajeevan**, Gadhavi, H, S.V.B. Rao, A. Jayaraman, 2015, **Climate Dynamics**, 45, 3331-3345
22. An Indian Ocean precursor for Indian Summer Monsoon Rainfall variability, Sreejith, O.P., Swapna, P., Pai.D.S., and **Rajeevan, M**., 2015, **Geophys. Res.Letters**, *42*(21), 9345-9354
23. Prediction of Indian rainfall during the summer monsoon season on the basis of links with equatorial Pacific and Indian Ocean Climate indices, Sajani, S., Gadgil, S., Francis, P.A., and **Rajeevan, M**., 2015, **Environ Res. Letters**, 10 (9), DOI 10.1088/1748-9326/10/9/094004.
24. Unprecedented hailstorms over north peninsular India during February–March 2014, Kulkarni, J. R., Morwal, S. B., Narkhedkar, S. G., Maheskumar, R. S., Padmakumari, B., Sunitha Devi, S., &**Rajeevan, M**, 2015, ***Journal of Geophysical Research: Atmospheres,****120*(7), 2899-2912.
25. Development and Evaluation of an Objective Criterion for the Real-Time Prediction of Indian Summer Monsoon Onset in a Coupled Model Framework, Susmitha Joseph, A. K. Sahai, S. Abhilash, R. Chattopadhyay, N. Borah, B. E. Mapes, **M. Rajeevan**, and A. Kumar, 2015: ***J. Climate***, **28**, 6234–6248. doi: 10.1175/JCLI-D-14-00842.1
26. Improved Spread–Error Relationship and Probabilistic Prediction from the CFS-Based Grand Ensemble Prediction System, S. Abhilash, A. K. Sahai, N. Borah, S. Joseph, R. Chattopadhyay, S. Sharmila, **M. Rajeevan**, B. E. Mapes, and A. Kumar, 2015: ***J. Appl. Meteor. Climatol.***, **54**, 1569–1578, doi: 10.1175/JAMC-D-14-0200.1
27. Rethinking Indian monsoon rainfall prediction in the context of recent global warming, B. Wang, B. Xiang, J.Li, P.J. Webster, **M. Rajeevan**, J.Liu and K.J.Ha, 2015, **Nature Communications**, 6:7154, DOI: 10.1038/NCOMMS8154
28. Precipitation climatology over India: validation with observations and reanalysis datasets and spatial trends, P. Kishore, S. Jyothi, G.Basha, Rao, S.V.B., **M. Rajeevan**, I. Velicogna and T.C. Sutterley, 2015, **Climate Dynamics**, DOI**:** 10.1007/s00382-015-2597-y.
29. Role of vertical structure of cloud microphysical properties on cloud radiative forcing over the Asian monsoon region, V. Ravi Kiran, **M. Rajeevan**, H.Gadhavi, S.V.B.Rao, and A. Jayaraman, 2015, **Climate Dynamics**, DOI: 10.1007/s00382-015-2542-0
30. Analysis of the daily rainfall events over India using a new long period (1901-2010) high resolution (0.25° × 0.25°) gridded rainfall data set, Pai, D.S., Sridhar, L., Badwaik, M.R., **Rajeevan, M.** (2014) **Climate Dynamics,**DOI**:** 10.1007/s00382-014-2307-1
31. High-resolution operational monsoon forecasts: an objective assessment, Sahai, A.K., Abhilash, S., Chattopadhyay, R., Borah, N., Joseph, S., Sharmila, S., **Rajeevan, M.**,(2014) **Climate Dynamics,** DOI**:** 10.1007/s00382-014-2210-9
32. Examining pathways for modulation of Indian Summer Monsoon Rainfall by extratropical tropospheric temperature pattern, Srivastava, A.K., **Rajeevan, M.,**Kshirsagar, S.R., (2014) **International Journal of Climatology,** DOI**:** 10.1002/joc.3940

33. Gridded daily Indian monsoon rainfall for 14 seasons: Merged TRMM and IMD gauge analyzed values ,Mitra, A.K., Momin, I.M., Rajagopal, E.N., Basu, S., **Rajeevan, M**., Krishnamurti, T.N. (2013) **Journal of Earth System Science**, 122 (5), pp. 1173-1182.
34. Development of a high resolution land surface dataset for the South Asian monsoon region, C.K.Unnikrishnan, **M Rajeevan**, S.Vijayabhaskara Rao, Manoj Kumar, 2013, **Current Science**, 1235-1246.
35. On the epochal variation of intensity of tropical cyclones in the Arabian Sea, **M Rajeevan**, J.Srinivasan, K.Niranjan Kumar, C.Gnanaseelan and M.M. Ali, 2013, **Atmos.Sci.Letters**, 14, 249-255.
36. On the observed variability of monsoon droughts over India, K Niranjan Kumar, **M Rajeevan**, D.S.Pai, A.K.Srivastava and B. Preethi, 2013, **Weather and Climate Extremes,** 1, 42-50.
37. Enhancement of inland penetration of monsoon depressions in the Bay of Bengal due to prestorm ground wetness, Kishtawal, C.M., Niyogi, D., Rajagopalan, B., **M.Rajeevan**, Jaiswal, N., Mohanty, U.C., 2013**, Water Resources Research 49 (6)** , 3589-3600**.**
38. Large scale features and assessment of spatial scale correspondence between TMPA and IMD rainfall datasets over Indian landmass, Uma, R., Kumar, T.V.L., Narayanan, M.S., **M. Rajeevan**, Bhate, J., Kumar, K.N. 2013**, Journal of Earth System Science 122 (3) , 573-588.**
39. On the detection of onset and activity of the Indian summer monsoon using GPS RO refractivity profiles, Jagannadha Rao, V.V.M., VenkatRatnam, M., DurgaSanthi, Y., Roja Raman, **M.Rajeevan,** VijayaBhaskara Rao, S**. 2013, Monthly Weather Review 141 (6) ,** 2096-2106.
40. Diurnal variability of stability indices observed using radiosonde observations over a tropical station: Comparison with microwave radiometer measurements, Ratnam, M.V., Santhi, Y.D., **M.Rajeevan,** Rao, S.V.B. 2013, **Atmospheric Research 124 , 21-33**
41. Identification and validation of homogeneous rainfall zones in India using correlation analysis, Saikranthi, K., Narayana Rao, T., **M. Rajeevan,** VijayaBhaskara Rao, S., 2013, **Journal of Hydrometeorology 14 (1) ,** 304-317
42. Nowcasting severe convective activity over southeast India using ground-based microwave radiometer observations, Madhulatha, A., **M.Rajeevan,** VenkatRatnam, M., Bhate, J., Naidu, C.V., 2013, **Journal of Geophysical Research D: Atmospheres 118 (1) , 1-13**
43. Characteristic features of winter precipitation and its variability over northwest India, Yadav, R.K., Rupa Kumar, K., **M.Rajeevan,** 2012, **Journal of Earth System Science,**121 (3) , 611-623
44. Northeast monsoon over India: Variability and prediction, **M.Rajeevan**, Unnikrishnan, C.K., Bhate, J., Niranjan Kumar, K., Sreekala, P.P. 2012, **Meteorological Applications** 19 (2) , 226-236.
45. A study of vertical cloud structure of the Indian summer monsoon using CloudSat data, 2012, **M. Rajeevan**, P. Rohini, K. Niranjan Kumar, J.Srinivasan and C.K.Unnikrishnan, **Climate Dynamics**, DOI 10.1007/s00382-012-1374-4.

46. Development of a perfect prognosis probabilistic model for prediction of lightning over southeast India, 2012, **M. Rajeevan**, A. Madhulatha, M. Rajasekhar, JyotiBhate, Amit Kesarkar and B.V.Appa Rao, **J.EarthSyst Sci.,** 121, 355-371.
47. Evaluation of the ENSEMBLES multi-model seasonal forecasts of Indian summer monsoon variability, 2011, **M. Rajeevan**, C.K.Unnikrishnan and B.Preethi, **Climate Dynamics**, DOI 10.1007/s00382-011-1061-1
48. Role of intra-seasonal oscillations in modulating Indian summer monsoon rainfall, 2011, Ashwini Kulkarni, R. Kripalani, S.Sabade, and **M. Rajeevan**, **Climate Dynamics**, DOI 10.1007/s00382-010-0973-1
49. Northeast monsoon variability over south peninsular India and its teleconnections, 2011, P.P.Sreekala, S. VijayaBhaskara Rao and **M Rajeevan**, **Theor.Appl.Climatology**, DOI 10.1007/s00704-011-0513
50. Intriguing Aspects of the Monsoon Low-Level Jet over Peninsular India Revealed by High-Resolution GPS Radiosonde Observations, 2011, M Roja Raman, M Venkat Ratnam, **M.Rajeevan**, V.V.M Jagannadha Rao and S.VijayaBhaskara Rao, **J.Atmos.Sci**, 68, 1414-1423.
51. Sub-daily variations observed in Tropical Easterly Jet (TEJ) streams, 2011,M. VenkatRatnam, M.RojaRaman, SanjayKumarMehta, DebashisNath, B.V.Krishnamurthy, **M. Rajeevan**, S.VijayaBhaskaraRao, D.NarayanaRao, **Journal of Atmospheric and Solar-Terrestrial Physics**,73, 731–740
52. State of the Climate in 2010: South Asian Climate, 2011, **M. Rajeevan**, A.K.Srivastava, J.Revadekar, ZubairLareef, **Bull. Amer. Met Society**, 92, S1–S236, doi: http://dx.doi.org/10.1175/1520-0477-92.6.S1
53. Active and Break spells of the Indian summer monsoon, 2010, **M. Rajeevan**, SulochanaGadgil and JyotiBhate, **J.Earth System Science**, 119, 229-247.
54. Sensitivity of WRF cloud microphysics to simulations of a severe thunderstorm event over southeast India, 2010, **M Rajeevan**, A Kesarkar, S.B.Thampi, T.N.Rao, B.Radhakrishna and M.Rajasekhar, **Ann.Geophys**. 28, 603-619.
55. Study of Atmospheric Forcing and Responses (SAFAR) campaign: overview, 2010, Jayaraman A, Ratnam MV, Patra AK, T.Narayana Rao, S.Sridharan, **M. Rajeevan**, H.Gadhavi, A.Kesarkar, P.Srinivasulu, K.Raghunath, **Ann. Geophys**. 28, 89-101.
56. State of the Climate in 2009: South Asian Climate, **M. Rajeevan**, A.K.Srivastava, and J.Revadekar, 2010, **Bull. Amer. Met Society**, 91, July issue, doi: 10.1175/BAMS-91-7-State of the Climate
57. Analysis of variations of cloud and aerosol properties associated with active and break spells of Indian summer monsoon using MODIS data, 2009, Ravi Kiran, V., **M. Rajeevan**, S. VijayaBhaskara Rao and N Prabhakara Rao, **Geo Phys.Letters**, Vol 36, DOI 10.1029/2008GL037135
58. Summer monsoon onset over Kerala: New Definition and prediction, 2009, Pai, D.S. and **M. Rajeevan**, S, **J. Earth System. Science**, Vol. 118, 123-135.
59. A high resolution daily gridded rainfall dataset (1971-2005) for mesoscale meteorological studies, 2009, **M. Rajeevan**. andJyotiBhate, **Current Science**, 96, 558-562.

60. State of the Climate in 2008: South Asian Climate, 2009, **M Rajeevan**, A.K.Srivastava, and J. Revadekar**, Bull. Amer.Met. Society**, 90, 8, doi: 10.1175/BAMS-90-8-State of the Climate
61. Increasing influence of ENSO and decreasing influence of AO/NAO in the recent decades over northwest India winter precipitation, 2009, Yadav, R. K., K. Rupa Kumar, and **M. Rajeevan**, **J. Geophys. Res.,** 114, D12112, doi:10.1029/2008JD011318.
62. Daily Indian Precipitation Analysis from a Merge of Rain-Gauge Data with the TRMM TMPA Satellite-Derived Rainfall Estimates, 2009, Mitra, A.K., A.K.Bohra, **M.Rajeevan**, and T.N.Krishnamurti, **J. of Met. Soc. of Japan**, 87A, 265-279
63. Improving Global Model Precipitation Forecasts over India from Downscaling and FSU Superensemble Part I- 1-5 days forecasts, 2009, Krishnamurti, T.N., Mishra, A.K., Chakraborty, A., and **M Rajeevan**, **Mon. Wea. Rev.,** 137, 2713- 2735.
64. Variability of extreme rainfall events over during the southwest monsoon season, 2009, Pattanaik. D.R., **M Rajeevan**, **Meteorological Applications**, DOI 10.1002/met.164.
65. Characteristics of the Tropical Easterly Jet: Long-term trends and their features during active and break monsoon phases, 2009, Raman MR, Rao VVMJ, Ratnam MV, **M. Rajeevan,**S.V.B.Rao, D.Narayana Rao, N. Prabhakara Rao, **J.Geophys.Res**., 114, D19105, doi:10.1029/2009JD012065
66. Development of a high resolution daily gridded temperature data set (1969-2005) for the Indian region, 2009, Srivastava, A.K., **M Rajeevan**, S.R.Kshirsagar, **Atmospheric Science Letters,** DOI 10.1002/asl.232.
67. Analysis of variability and trends of extreme rainfall events over India using 104 years of gridded daily rainfall data, 2008, **M Rajeevan**, JyotiBhate and A.K.Jaswal, **Geophysical Research Letters**, Vol.35, L18707, doi 10.1029/2008GL035143.
68. Inter-annual relationship between Atlantic Sea Surface Temperature anomalies and Indian summer monsoon, 2008, **M. Rajeevan** and Latha Sridhar, **Geophysical Research Letters**, doi 10.1029/2008GL036025.
69. Out of phase relationships between convection over northwest India and warm pool region during the winter season, 2008, R.K.Yadav, K.Rupa Kumar and **M.Rajeevan**, **Int. J. Climatology**, DOI 10.1002/joc.1783.
70. Climate Change scenarios for northwest India winter season, 2008, R.K.Yadav, K.Rupa Kumar and **M.Rajeevan**, **Quaternary International,** DOI 10.1016/quaint.20.08.09.012
71. On the El Nino-Indian Monsoon predictive relationships, 2007, M. Rajeevan and D.S.Pai, **Geophys.Res.Letters**, Vol.34, doi: 10.1029/2006GL028916.
72. Sensitivity of surface radiation budget to clouds over the Asian monsoon region, 2007, S.Balachandran and **M.Rajeevan**, **J.Earth. System. Science**, 116, 159-169.
73. Monsoon Variability: Links to major oscillations over the equatorial Pacific and Indian oceans, 2007, SulochanaGadgil, **M.Rajeevan** and P.A.Francis, **Current Science**, 93, 182-194.
74. Trends in the rainfall pattern over India, 2007, Guhathakurta, P, and **M.Rajeevan, Int. J.Climatology**, DOI 10.1002/joc.
75. North-west Pacific tropical cyclone activity and July rainfall over India, D.R.Pattanaik and **M.Rajeevan**, 2006, **Meteor and Atmos. Phys**., DOI 10.1007/s00703-006-0193-0.

76. Empirical Prediction of Indian summer monsoon rainfall with different lead periods based on global SST anomalies, D.S.Pai and **M.Rajeevan**, 2006, **Meteor and Atmos.Phys**, 92, 33-43.
77. New Statistical models for long-range forecasting of southwest monsoon rainfall over India, **M.Rajeevan**, D.S.Pai, R.Anil Kumar and B.Lal, **Climate Dynamics**, 2006, DOI 10.1007/s00382-006-019706.
78. High resolution daily gridded rainfall data for the Indian region: Analysis of break and active monsoon spells, **M.Rajeevan**, JyotiBhate, J.D.Kale and B.Lal, 2006, **Current Science,** 91, 3, 296-306.
79. On the recent strengthening of the relationship between ENSO and northeast monsoon rainfall over South Asia, 2006, Pankaj Kumar, K.Rupa Kumar, **M.Rajeevan**, and A.K.Sahai, **Climate Dynamics**, DOI 10.1007/s00382—006-0210-0.
80. Did unusual warming over the mid and higher latitudes play some role in causing the unprecedented failure of the southwest monsoon during July 2002?, 2006, A.K.Srivastava, P.Guhatkaurta, **M.Rajeevan**, S.K.Dikshit and S.R.Kshirsagar, **Met and Atmos. Physics**, DOI 10.1007/s00703-006-0203-x.
81. Monsoon prediction – Why yet another failure?,SulochanaGadgil, **M.Rajeevan** and Ravi Nanjundiah, 2005, **Current Science**, 88, 9, 1389, 1400.
82. Role of ITCZ over North Indian Ocean and Pre-Meiyu front in modulating July rainfall over India, Srivastava, A.K., **M. Rajeevan** and S.R. Shirsagar, 2004, **J. Climate**, 17,673-678.
83. IMD's New Operational Models for Long Range Forecast of South-west Monsoon Rainfall over India and their verification for 2003, **M. Rajeevan**, D.S.Pai, S.K.Dikshit and R.R.Kelkar, 2004, **Current Science**, 86, 422-431.
84. Tropical Pacific Upper Ocean heat content variations and Indian summer monsoon rainfall, **M.Rajeevan** and M.McPhaden, 2004, **Geophys.Res.Letters**, 31, DOI 10.1029/2004GL020631.
85. Updated operational models for long-range forecasts of Indian summer monsoon rainfall, V. Thapliyal and **M Rajeevan**, 2003, **Mausam,** 54, 495-504.
86. Predictive relationships between Indian Ocean sea surface temperatures and Indian summer monsoon rainfall, **M. Rajeevan**, D.S.Pai and V. Thapliyal, 2002, **Mausam,** 53, 337-348.
87. Teleconnection of SST and OLR anomalies over Atlantic Ocean with Indian summer monsoon, A.K.Srivastava, **M. Rajeevan** and Ruta Kulkarni, 2002, **Geophys. Res. Letters**., Vol.29, No.8.125-1, 125-4.
88. Winter Surface Pressure anomalies over Eurasia and Indian summer monsoon rainfall, **M.Rajeevan**, 2002, **Geophys.Res.Letters**., Vol. 29, No.10, 94-1,94-4.
89. Interactions among Deep convection, Sea surface temperature and radiation in the Asian monsoon region, **M. Rajeevan**, 2001, **Mausam,** 52, 83-96.
90. Asymmetric thermodynamic structure of monsoon depression revealed in Microwave satellite data, **M. Rajeevan**, D.S.Pai and M.R.Das**., Current Science**, 2001, 81,448-450.
91. Prediction of Indian summer monsoon: Status, Problems and prospects, **M. Rajeevan**, **Current Science**, 2001, 81,101-107.

92. Net Cloud Radiative Forcing at the top of the Atmosphere in the Asian monsoon region, 2000, **M. Rajeevan** and J.Srinivasan**, J.Climate**, 13, 650-657.
93. New Models for Long range forecasts of summer monsoon rainfall over NW India and Peninsular India, **M. Rajeevan**,P.Guhathakurta and V.Thapliyal, 2000, **Met and Atmos. Phys.,**73, 211-225.
94. Decadal variations of cloudiness, sea surface temperature and monsoon depressions in the north Indian Ocean, **M. Rajeevan**, U.S.De and M.Rajeevan,2000, **Current Science**, 79,283-285.
95. Cloud Climatology of Indian Ocean based on Ship Observations, **M. Rajeevan**, R.K.Prasad and U.S.De, 2000, **Mausam,** 52, 527-540.
96. Spatial and temporal relationships between global land surface air temperature anomalies and Indian summer monsoon, **M.Rajeevan**, D.S.Pai and V. Thapliyal, 1999, **Met and Atm. Physics**, 66,157-171.
97. Canonical Correlation Analysis (CCA) Models for long range forecasts of sub-divisional monsoon rainfall over India, **M. Rajeevan**, V.Thapliyal, S.R.Patil and U.S.De, 1999, **Mausam,** 50, 145-152.
98. Model calculations of non-cloud radiative forcing of sulphate aerosol, **M. Rajeevan**, 1998, **Mausam,** 49,45-58.
99. Aerosol-Cloud-Climate effect: Study with a radiative transfer model, **M.Rajeevan**, 1998, **Mausam**, 49,195-202.
100. Clouds and cloud radiative forcing over tropical Indian Ocean and their relationship with sea surface temperatures, D. S. Pai and **M. Rajeevan**, 1998, **Current Science**, 75, No.4, 372-381.
101. Climate Implications of the observed changes in vertical distribution of ozone, **M. Rajeevan,1996**, **Int. J. Climatology**, 16, 15-22.
102. Long range prediction of monsoon onset over Kerala, **M. Rajeevan** and D.P.Dubey, 1995, **Mausam**, 46, 287-290.
103. Model calculations of competing climatic effects of SO_2 and CO_2 in fossil fuel combustion, **M. Rajeevan**, K.C.Sinha Ray and H. N.Srivastava, 1995, **Current Science**, 68, 1226-1231.
104. Inter-relationship between NW Pacific typhoon activity and Indian summer monsoon on interannual and intra-seasonal time scales, **M. Rajeevan**, 1993, **Mausam**, 44, 109-111.
105. Upper tropospheric circulation and thermal anomalies over central Asia associated with major droughts and floods in India, **M. Rajeevan**, 1993, **Current Science**, 64, 244-247.
106. Upper air circulation and thermal anomalies over India and neighbourhood vis-a-vis Indian summer monsoon activity, **M.Rajeevan**, 1991, **Mausam**, 42, 155-160.
107. A preliminary study on the variability of post monsoon tropical cyclone activity over the north Indian ocean, **M. Rajeevan** and P.P. Butala, 1990, **Mausam**, 41, 409-414.
