

## **CURRICULUM VITAE**

### **BOREDDY Suresh Kumar Reddy**

Research Associate  
Space Physics Laboratory  
Vikram Sarabhai Space Centre  
Indian Space Research Organisation  
Thiruvananthapuram 695 022, India  
Phone: +91-471-270 3720 (Office)



Mobile: +91-6305157270

Email: boreddysuresh@gmail.com; sk\_reddy@vssc.gov.in

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**RESEARCH FIELD:** Atmospheric Chemistry and Aerosol Research

SCOPUS ID: 56035904300

ORCID: <https://orcid.org/0000-0002-0619-2942>

RESEARCH GATE: [https://www.researchgate.net/profile/Boreddy\\_Suresh\\_Kumar\\_Reddy2](https://www.researchgate.net/profile/Boreddy_Suresh_Kumar_Reddy2)

**NATIONALITY:** INDIAN

### **RESEARCH INTERESTS**

- Sources and formation pathways of various chemical species in atmospheric aerosols
- Atmospheric processes and/or chemical aging during long-range transport
- Biosphere-atmosphere interactions and their impact in cloud forming potential
- Geochemical analysis of atmospheric trace metals
- Fingerprints of organic compounds in anthropogenic and biogenic aerosols over Asia

### **EDUCATION**

1. **Ph.D. in Physics (2011):** Sri Krishnadevaraya University, Anantapur, India
2. **M.Phil. Physics (2008):** Sri Krishnadevaraya University, Anantapur.
3. **M.Sc. Physics (2005):** Sri Krishnadevaraya University, Anantapur, India.
4. **B.Sc. (Maths, Physics and Computer Science) (2003):** Sri Krishnadevaraya University, Anantapur, AndhraPradesh, India.

### **POST DOCTORAL RESEARCH**

1. **Research Associate (Feb 2019- to date)**- Space Physics Laboratory, VSSC, Thiruvananthapuram, India.
2. **JSPS Pathway postdoctoral research (April 2016- March 2018)**- Institute of Low Temperature Science, Hokkaido University, Japan.
3. **JSPS Standard postdoctoral Research (April 2014- March 2016)**- Institute of Low Temperature Science, Hokkaido University, Japan.
4. **Postdoctoral Research (April 2012- March 2014)**- Institute of Low Temperature Science, Hokkaido University, Japan.

## AWARDS

- ✓ Prestigious JSPS (Pathway) fellowship for the year 2016
- ✓ Prestigious JSPS (Standard) fellowship for the year 2014
- ✓ Hokkaido University Postdoctoral Fellowship award 2012
- ✓ Awarded Senior Research fellowship from the ISRO-ARFI, Govt. of India in 2009.

## BOOKS

- ✓ Tropospheric Ozone: Measurements and Characterization Techniques, Published by *Scholars' Press*, United States, 2013 (ISBN 10: 3639517180 / ISBN 13: [9783639517187](https://doi.org/10.1007/9783639517187))

## PUBLICATIONS IN PEER REVIEWED JOURNALS (Total no: 35)

1. Tomoki Mochizuki, Kimitaka Kawamura, Yuzo Miyazaki, and **Suresh K. R. Boreddy**, Distributions and sources of gaseous and particulate low molecular weight monocarboxylic acids in a deciduous broadleaf forest from northern Japan, **Atmospheric Chemistry and Physics**, 19, 2421-2432 (2019)
2. **Suresh K. R. Boreddy**, Fahmida Parvin, Kimitaka Kawamura, Chunmao Zhu, and Chung-Te Lee, Stable carbon and nitrogen isotopic compositions of fine aerosols (PM<sub>2.5</sub>) during an intensive biomass burning over Southeast Asia: Influence of SOA and aging, **Atmospheric Environment** 191, 478–489 (2018).
3. **Suresh K. R. Boreddy** and Kimitaka Kawamura, Investigation on the hygroscopicity of oxalic acid and atmospherically relevant oxalate salts under sub- and supersaturated conditions, **Environmental Science: Processes and Impacts** 20, 1069-1080 (2018) DOI: 10.1039/c8em00053K.
4. **Suresh K.R. Boreddy**, Md. Mozammel Haque, Kimitaka Kwamura, Pingqing Fu, Yongwon Kim, Homologous series of n-Alkanes (C<sub>19</sub>-C<sub>35</sub>), fatty acids (C<sub>12</sub>-C<sub>32</sub>) and n-alcohols (C<sub>8</sub>-C<sub>30</sub>) in atmospheric aerosols from central Alaska: Molecular distributions, seasonality and source indices, **Atmospheric Environment**, 184, 87-97 (2018).
5. **Suresh K.R. Boreddy**, Md. Mozammel Haque, Kimitaka Kawamura, Long-term (2001-2012) trends of carbonaceous aerosols from a remote marine island in the western North

- Pacific: an outflow region of Asian pollutants, **Atmospheric Chemistry and Physics** 8, 1291-1306, (2018).
6. Müller, A., Y. Miyazaki, S. G. Aggarwal, Y. Kitamori, **S. K. R. Boreddy**, and K. Kawamura, Effects of chemical composition and mixing state on size-resolved hygroscopicity and cloud condensation nuclei activity of submicron aerosols at a suburban site in northern Japan in summer, **Journal of Geophysical Research: Atmosphere**, 122, doi:10.1002/2017JD027286, (2017).
  7. **Suresh K.R. Boreddy**, Tomoki Mochizuki, Kimitaka Kawamura, Srinivas Bikina, M.M. Sarin, Homologous series of low molecular weight (C<sub>1</sub>-C<sub>10</sub>) monocarboxylic acids, benzoic acid and hydroxyacids in fine-mode (PM<sub>2.5</sub>) aerosols over the Bay of Bengal: Influence of heterogeneity in air masses and formation pathways, **Atmospheric Environment**, 167, 170-180, 2017.
  8. **Suresh K.R. Boreddy**, Kimitaka Kawamura, Eri Tachibana, Long-term (2001-2013) observations water-soluble dicarboxylic acids and related compounds over the western North Pacific: Trends, seasonality and source apportionment, **Scientific Reports**, 7: 8518 DOI:10.1038/s41598-017-08745-w, 2017
  9. D.K. Deshmukh, K. Kawamura, M.K. Deb, **Suresh K.R. Boreddy**, Sources and formation processes of water-soluble dicarboxylic acids, ω-oxocarboxylic acids, α-dicarbonyls, and major ions in summer aerosols from eastern central India, **Journal of Geophysical Research: Atmosphere**, 122, 3630–3652 (2017).
  10. **Suresh K. R. Boreddy**, Kimitaka Kawamura, Kazuhiro Okuzawa, Yogo Kanaya, Zifa Wang: Temporal and diurnal variations of carbonaceous aerosols and major ions in biomass burning influenced aerosols over Mt. Tai in the North China Plain during MTX2006, **Atmospheric Environment**, 154, 106-117 (2017).
  11. Yu Yan, Pingqing Fu, Bo Jing, Chao Peng, **S.K.R. Boreddy**, Fan Yang, Lianfang Wei, Yele Sun, Zifa Wang, Maofa Ge: Hygroscopic behavior of water-soluble matter in marine aerosols over the East China Sea, **Science of the Total Environment** 578, 307-316 (2017).
  12. K. Raja Obul Reddy, G. Balakrishnaiah, K. Rama Gopal, N. Siva Kumar Reddy, T. Chakradhar Rao, T. Lokeswara Reddy, S. Nazeer Hussain, M. Vasudeva Reddy, R.R. Reddy, **S.K.R. Boreddy**, S. Suresh Babu: Long term (2007–2013) observations of columnar aerosol optical properties and retrieved size distributions over Anantapur, India using a multi wavelength solar radiometer. **Atmospheric Environment** 142, 238-250 (2016).
  13. **S. K. R. Boreddy** and Kimitaka Kawamura, Hygroscopicity of water-soluble matter extracted from the western North Pacific aerosols: influence of atmospheric processes and long-range transport, **Science of the Total Environment**, 557-558, 285-295 July 2016 (2016).
  14. Yan-Lin Zhang, Kimitaka Kawamura Ping Qing Fu, **Suresh K. R. Boreddy** · Tomomi Watanabe · Shiro Hatakeyama · Akinori Takami · Wei Wang, Aircraft observations of water-soluble dicarboxylic acids in the aerosols over China. **Atmospheric Chemistry and Physics** 16 (10), 6407-6419 (2016)
  15. DK Deshmukh, K Kawamura, M.Lazaar, B Kunwar, **S. K. R. Boreddy**, Dicarboxylic acids, oxoacids, benzoic acid, α-dicarbonyls, WSOC, OC, and ions in spring aerosols

- from Okinawa Island in the western North Pacific Rim: size distributions and formation, **Atmospheric Chemistry and Physics** 16, 5263–5282 (2016).
16. **S. K. R. Boreddy**, Kimitaka Kawamura, Srinivas Bikkina, and M. M. Sarin, Hygroscopic growth of water-soluble extracts from marine aerosols (PM<sub>2.5</sub>) over the Bay of Bengal: influence of heterogeneity in air masses and formation pathways, **Science of the Total Environment**, 544, 661-669 (2016).
  17. **S. K. R. Boreddy**, K. Kawamura, MM Haque, Long-term (2001–2012) observation of the modeled hygroscopic growth factor of remote marine TSP aerosols over the western North Pacific: impact of long-range transport of pollutants and their mixing states, **Physical Chemistry Chemical Physics** 17 (43), 29344-29353 (2015).
  18. S. Bikkina, K. Kawamura, K. Imanishi, **S. K. R. Boreddy**, and Y. Nojiri, Seasonal and longitudinal distributions of atmospheric water-soluble dicarboxylic acids, oxocarboxylic acids and  $\alpha$ -dicarbonyls over the North Pacific, **Journal of Geophysical Research-Atmospheres**, 120, 5191-5213, (2015).
  19. **S. K. R. Boreddy** and Kimitaka Kawamura, A 12 year observation of water-soluble ions in TSP aerosols collected at remote marine location in the western North Pacific: an outflow region of Asian dust, **Atmospheric Chemistry and Physics** 15, 6437-6453 (2015).
  20. **S. K. R. Boreddy**, Kimitaka Kawamura, Stelyus Mkomu, and Pingqing Fu, Hygroscopic behavior of water-soluble matter extracted from Biomass burning aerosols collected at a rural site in Tanzania, East Africa. **Journal of Geophysical Research-Atmospheres**, 119, 12233-12245 (2014).
  21. **S. K. R. Boreddy**, Kimitaka Kawamura, and Jinsang Jung, Hygroscopic Properties of particles nebulized from water extracts of aerosols collected at Chichijima Island in the western North Pacific: an outflow region of Asian dust. **Journal of Geophysical Research-Atmospheres**, 119, 167-178 (2014).
  22. **B. Suresh Kumar Reddy**, K. Raghavendra Kumar, G. Balakrishnaiah, K. Rama Gopal, R. R. Reddy, L. S.S. Reddy, K. Narasimhulu, K. Krishna Moorthy and S. Suresh Babu. Ground based in-situ measurements of near surface aerosols over Anantapur: Heterogeneity in source impacts. **Advances in Atmospheric Sciences** 30(1), 235–246, (2013).
  23. **B. Suresh Kumar Reddy**, K. Raghavendra Kumar, G. Balakrishnaiah, K. Rama Gopal, R. R. Reddy, S.Md. Arafath, A.P. Lingaswamy, K.Umadevi, S. Pavan Kumari and Syam Lal. Analysis of diurnal and seasonal behavior of surface ozone and its precursor (NO<sub>x</sub>) at a semi-arid rural site in southern India. **Aerosol and Air Quality Research**, 12: 1081–1094, (2012).
  24. G. Balakrishnaiah, K. Raghavendra Kumar, **B. Suresh Kumar Reddy**, K. Rama Gopal, R. R. Reddy, L. S. S. Reddy, K. Narasimhulu, K. Krishna Moorthy and S. Suresh Babu. Spatio-temporal variations in aerosol optical and cloud parameters over Southern India retrieved from MODIS satellite data. **Atmospheric Environment** 47, 435-445, (2012).
  25. **B. Suresh Kumar Reddy**, K. Raghavendra Kumar, G. Balakrishnaiah, K. Rama Gopal, R. R. Reddy, K. Narasimhulu, L. Siva Sankara Reddy, K. K. Moorthy and S. Suresh Babu. Potential Source regions contributing to the seasonal variations of Black Carbon aerosols over Anantapur in southeast India. **Aerosol and Air Quality Research** 12, 340–354 (2012).

26. **B. Suresh Kumar Reddy**, K. Raghavendra Kumar, G. Balakrishnaiah, K. Rama Gopal, R. R. Reddy, K. Narasimhulu, L. Siva Sankara Reddy, S. Vijaya Bhaskara Rao, K. K. Moorthy and S. Suresh Babu. Aerosol climatology over Tirupati (India) derived from surface and columnar measurements: First results from a 30 day campaign. **Journal of Atmospheric & Solar Terrestrial Physics** 73, 1727-1738 (2011).
27. K. Raghavendra Kumar, K. Narasimhulu, G. Balakrishnaiah, **B. Suresh Kumar Reddy**, K. Rama Gopal, R. R. Reddy, K. Krishna Moorthy and S. Suresh Babu. Spatial heterogeneities in aerosol properties over Bay of Bengal inferred from ship-borne and MODIS observations during ICARB-W cruise campaign: Implications to radiative forcing. **Atmospheric Environment** 45, 404-412, (2011).
28. G. Balakrishnaiah, K. Raghavendra Kumar, **B. Suresh Kumar Reddy**, K. Rama Gopal, R. R. Reddy, L. S. S. Reddy, K. Narasimhulu, K. Krishna Moorthy and S. Suresh Babu. Anthropogenic impact of BC and total mass concentration of composite aerosols over a tropical semi-arid zone: First time results from Anantapur (A.P.), India. **Journal of Asian Earth Sciences** 42, 1297-1308, (2011).
29. G. Balakrishnaiah, K. Raghavendra Kumar, **B. Suresh Kumar Reddy**, K. Rama Gopal, R. R. Reddy, L.S.S. Reddy, Y. Nazeer Ahammed, K. Narasimhulu, K. Krishna Moorthy and S. Suresh Babu. Analysis of optical properties of atmospheric aerosols inferred from spectral AODs and Ångström wavelength exponent. **Atmospheric Environment** 45, 1275-1285, (2011).
30. **B. Suresh Kumar Reddy**, L.S.S.Reddy, Jun-Ji Cao, K. Raghavendra Kumar, G. Balakrishnaiah, K. Rama Gopal, R.R.Reddy, K. Narasimhulu, Syam Lal. Simultaneous measurements of surface ozone at two sites over the Southern Asia: A comparative study. **Aerosol and Air Quality Research** 11, 895–902, (2011).
31. G. Balakrishnaiah, K. Raghavendra Kumar, **B. Suresh Kumar Reddy**, K. Rama Gopal, R. R. Reddy, L. S. S. Reddy, K. Narasimhulu, K. Krishna Moorthy and S. Suresh Babu. Characterization of PM, PM<sub>10</sub> and PM<sub>2.5</sub> concentration at a tropical semi-arid station, Anantapur. **Indian Journal of Radio and Space Physics** 40, 95-204, (2011).
32. K. Raghavendra Kumar, K. Narasimhulu, G. Balakrishnaiah, **B. Suresh Kumar Reddy**, R. R. Reddy, K. Rama Gopal, L.S.S. Reddy, Y. Nazeer Ahammed, S.K. Satheesh, K. Krishna Moorthy and S. Suresh Babu. Characterization of black carbon over a tropical semi-arid region of Anantapur, India. **Atmospheric Research** 100, 12-17, (2011).
33. **B. Suresh Kumar Reddy**, K. Raghavendra Kumar, G. Balakrishnaiah, K. Rama Gopal, R. R. Reddy, K. Narasimhulu, Y. Nazeer Ahammed, L. S. S. Reddy and Shyam Lal. Observational studies on variations in surface ozone concentration at Anantapur in India. **Atmospheric Research** 98, 125-139, (2010).
34. K. Raghavendra Kumar, K. Narasimhulu, G. Balakrishnaiah, **B. Suresh Kumar Reddy**, K. Rama Gopal, R.R. Reddy, S.K. Satheesh, K. Krishna Moorthy and S. Suresh Babu. A study on the variations of optical and physical properties of aerosols over a tropical semi-arid station during grassland fire. **Atmospheric Research** 95, 77-87, (2010).
35. K. Raghavendra Kumar, K. Narasimhulu, G. Balakrishnaiah, **B. Suresh Kumar Reddy**, K. Rama Gopal, R.R. Reddy, K. Krishna Moorthy and S. Suresh Babu. Size segregated mass concentration and size distribution of near surface aerosols over a tropical Indian semi-arid station, Anantapur: Impact of long range transport. **Science of the Total Environment** 407, 5589-5604, (2009).

## MANUSCRIPTS UNDER REVIEW

1. **S. K. R. Boreddy** et al. (2019) Impact of ice-free oases on particulate matter over the East Antarctic: inferences from the carbonaceous, water-soluble species and trace metals. **Polar Science** (revision submitted)
2. **S. K. R. Boreddy** et al. (2019) Atmospheric chemistry of size-resolved coastal urban aerosols associated with different air masses over tropical peninsular India: seasonality, size distribution, sources and formation processes. **Journal of Atmospheric Chemistry** (under review)
3. **S. K. R. Boreddy** et al. (2019) Geochemistry of trace metals in coastal urban aerosols associated with different polluted air masses over tropical peninsular India: seasonality, size distributions, source apportionment and potential health hazards **Atmospheric Research** (under review)
4. **S. K. R. Boreddy** et al. (2019) Homologous series of dicarboxylic acids, oxoacids and  $\alpha$ -dicarbonyles in biomass burning influenced aerosols over south East Asia: primary vs secondary sources (to be submitted to **Atmospheric Environment**)