

# Revathy S Ajayakumar

Scientist/Engineer – SE

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**Research Area:** Scientific studies on atmospheric trace gases [Ozone (O<sub>3</sub>), Nitrogen oxides (NO<sub>x</sub>), Carbon Monoxide (CO), Methane (CH<sub>4</sub>) and Sulphur Dioxide (SO<sub>2</sub>)] based on in-situ and satellite observations.

## Academic Qualification

Degree	Year	Details
• M.Phil.	2010	Physics, Kerala University Campus
• M. Sc.	2008	Physics, Kerala University Campus

## Professional Background

Designation	Duration	Institution
• Scientist	2013-Present	Space Physics Laboratory, VSSC, ISRO
• Scientist	2010-2013	National Remote Sensing Centre, ISRO

## Awards/Honors/Recognitions/Aclamations

- Qualified Kerala State Council for Science, Technology and Education (KSCSTE) Research fellowship, 2009

## Fellowship in professional bodies

- Life member, Indian society of Remote Sensing
- Life member, System society of India
- Life member, Indian society of Analytical Scientists
- Life member, Kerala Academy of Sciences (KAS), Trivandrum

## Major responsibilities

- Scientific investigation on atmospheric trace gases, with the objective to understand their concentration levels, temporal characteristics, spatial variations and processes governing them using in-situ and satellite observations.
- Responsible for the operation, quality check and scientific data analysis of trace gas analysers maintained at coastal location - Thumba, as a part of Atmospheric Trace gases-Chemistry, Transport and Modelling (AT-CTM) project of ISRO-GBP (Geosphere-Biosphere Programme).
- Focal point-SPL outstation Lab at high altitude site Ponmudi, responsible for the commissioning and operationalization of trace gas instruments.

## Conferences/Symposia/workshop

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1. Revathy S. A., P. R Nair, Girach I. A. and L. M. David," Long-term changes in near-surface and tropospheric ozone at the coastal environment of Thiruvananthapuram", National Space Science Symposium-2016, February 9-12, Vikram Sarabhai Space Centre, Trivandrum.
  2. P. R. Nair, Girach I. A., Revathy S. A., Kavitha M., and Aryasree S., Systematic seasonal pattern of tropospheric trace species over Indian region, TROPMET 2016 – National Symposium on Tropical Meteorology: Climate Change and Coastal Vulnerability during 18-21 December 2016 at SOA University, Bhubaneswar.
  3. Workshop on Advanced Statistical Concepts in Atmospheric and Oceanic Sciences, February 23-28, 2015, ESSO-INCOIS, Hyderabad.
  4. National workshop on Space Application for Sustainable Growth and Advancement, SAGA 2017, May 19-20, 2017, Thiruvananthapuram.
  5. Workshop on "Applications of Remote Sensing and Geographical Information System", August 6-10, 2018, IIRS, Dehradun.
  6. Revathy S. A., P. R Nair, Girach I. A., Dynamical nature of tropospheric ozone over a tropical location in Peninsular India: Role of transport and water vapour, International Conference on the Asian Summer Monsoon Anticyclone: Gateway of Surface Pollutants to the stratosphere, February 09-10, 2020, SRM Institute of Science and Technology, Chennai.
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#### Major Projects Involved

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- Natural Resources Census (NR-CENSUS) Project
  - BHUVAN Project
  - Snow Melt run-off studies project
  - Atmospheric Trace gases-Chemistry, Transport and Modelling (AT-CTM) project under Geosphere Biosphere Programme of ISRO (ISRO-GBP)
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#### Publications

1. Nair, P. R., Revathy, S. A., David, L. M., Girach, I. A., and Kavitha, M., 2018, Decadal changes in surface ozone at the tropical station Thiruvananthapuram (8.542° N, 76.858° E), India: effects of anthropogenic activities and meteorological variability. Environmental Science and Pollution Research. (<https://doi.org/10.1007/s11356-018-1695-x>, 2018)
2. Ajayakumar, R.S., Nair, P.R., Girach, I.A., Sunilkumar, S.V., Muhsin, M. and Chandran, P.S., 2019, Dynamical nature of tropospheric ozone over a tropical location in Peninsular India: Role of transport and water vapour. Atmospheric Environment. 218, p.117018. (<https://doi.org/10.1016/j.atmosenv.2019.117018>, 2019)

## रेवती एस अजयकुमार

वैज्ञानिक/इंजीनियर- एसई

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**अनुसंधान क्षेत्र :** इन-सीटू और उपग्रह अवलोकनों के आधार पर वायुमंडलीय कम सांद्रता वाली गैसों, ओजोन ( $O_3$ ), नाइट्रोजन ऑक्साइड ( $NO_x$ ), कार्बन मोनोऑक्साइड (CO), मीथेन ( $CH_4$ ) और सल्फर डाइऑक्साइड ( $SO_2$ ) पर वैज्ञानिक अध्ययन।

### शैक्षिक योग्यता

डिग्री	साल	विवरण
• एम.फिल .	2010	भौतिकी, केरल विश्वविद्यालय परिसर
• एम. एससी.	2008	भौतिकी, केरल विश्वविद्यालय परिसर

### पेशेवर पृष्ठभूमि

पद	समयांतराल	संस्थान
• वैज्ञानिक	2013 - वर्तमान	अंतरिक्ष भौतिकी प्रयोगशाला, वीएसएससी, इसरो
• वैज्ञानिक	2010-2013	राष्ट्रीय सुदूर संवेदन केंद्र, इसरो

### पुरस्कार/सम्मान/मान्यताएं /अभिनंदन

- केरल स्टेट काउंसिल फॉर साइंस, टेक्नोलॉजी एंड एजुकेशन (KSCSTE) रिसर्च फेलोशिप, 2009 के लिए योग्य

### पेशेवर निकायों में साथी जहाज

- आजीवन सदस्य, इंडियन सोसाइटी ऑफ रिमोट सेंसिंग
- आजीवन सदस्य, सिस्टम सोसाइटी ऑफ इंडिया
- आजीवन सदस्य, भारतीय विश्लेषणात्मक वैज्ञानिकों का समाज
- आजीवन सदस्य, केरल विज्ञान अकादमी (केएसएस), त्रिवेंद्रम

### प्रमुख जिम्मेदारियाँ

- Scientific investigation on atmospheric trace gases, with the objective to understand their concentration levels, temporal characteristics, spatial variations and processes governing them using in-situ and satellite observations.
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- Focal point-SPL outstation Lab at high altitude site Ponmudi, responsible for the commissioning and operationalization of trace gas instruments.

### सम्मेलन / संगोष्ठी / कार्यशाला

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1. Revathy S. A., P. R Nair, Girach I. A. and L. M. David," Long-term changes in near-surface and tropospheric ozone at the coastal environment of Thiruvananthapuram", National Space Science Symposium-2016, February 9-12, Vikram Sarabhai Space Centre, Trivandrum.
  2. P. R. Nair, Girach I. A., Revathy S. A., Kavitha M., and Aryasree S., Systematic seasonal pattern of tropospheric trace species over Indian region, TROPMET 2016 – National Symposium on Tropical Meteorology: Climate Change and Coastal Vulnerability during 18-21 December 2016 at SOA University, Bhubaneswar.
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## शामिल प्रमुख परियोजनाएं

- Natural Resources Census (NR-CENSUS) Project
- BHUVAN Project
- Snow Melt run-off studies project
- Atmospheric Trace gases-Chemistry, Transport and Modelling (AT-CTM) project under Geosphere Biosphere Programme of ISRO (ISRO-GBP)

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## प्रकाशनों

1. Nair, P. R., Revathy, S. A., David, L. M., Girach, I. A., and Kavitha, M., 2018, Decadal changes in surface ozone at the tropical station Thiruvananthapuram (8.542° N, 76.858° E), India: effects of anthropogenic activities and meteorological variability. Environmental Science and Pollution Research. (<https://doi.org/10.1007/s11356-018-1695-x>, 2018)
2. Ajayakumar, R.S., Nair, P.R., Girach, I.A., Sunilkumar, S.V., Muhsin, M. and Chandran, P.S., 2019, Dynamical nature of tropospheric ozone over a tropical location in Peninsular India: Role of transport and water vapour. Atmospheric Environment. 218, p.117018. (<https://doi.org/10.1016/j.atmosenv.2019.117018>, 2019)