

## Ambili K. M.

Scientist/Engineer – SD

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**Research Area:** Planetary ionospheric studies using observations and models.

### Academic Qualification

Degree	Year	Details
Ph.D.	2014	Physics, Thesis Title: “A study of equatorial and low latitude plasma processes using physics based ionospheric models in association with ground based/ space borne optical and radio experiments.”, University of Kerala, Trivandrum, India. Thesis advisors: Dr. Anil Bharadwaj & Dr. Raj Kumar Choudhary.
M. Sc.	2008	Physics (Condensed Matter Physics), Mangalore University, India.

### Professional Background

Designation	Duration	Institution
Scientist	April 2018- Present	Space Physics Laboratory, VSSC, ISRO, India
DST-INSPIRE Faculty	April 2015- April 2018	Indian Institute of Space Science and Technology, India
Research Scholar & Research Associate	January 2009-April 2015	Space Physics Laboratory, VSSC, ISRO, India

### Awards/Honors/Recognitions/Acclamations

- “Yuva Prathibha” in Science by the Kerala State, 2018.
- Young Scientist Award by URSI-GASS-2017 , URSI- APRASC-2016 & URSI-RCRS-2015.
- Best Paper Award , National Space Science Symposium, January, 2019.
- Best Poster Award, Kerala Science congress, January 2017.
- INSPIRE faculty award from DST, December 2014.

### Specific Scientific/Technical contributions

Developed a time-dependent quasi two- dimensional first principle ionospheric model

Developed an ionospheric model for the lunar ionosphere

Developed a photo chemical model for the Venusian ionosphere

### Publications – 10

1. St-Maurice. J.-P, **K M Ambili**, R K Choudhary (2011), Local electrodynamics of a solar eclipse at the magnetic equator in the early afternoon hours, **Geophy.Res.Lett.**,38, L04102,doi:2010GL046085.
2. R K Choudhary, J-P. St.Maurice, **K M Ambili**, Surendra Sunda, B M Pathan (2011), The impact of the January 15,2010 annular eclipse on the equatorial and low latitude ionospheric densities, **J. Geophys. Res.**, doi:2011JA016504.
3. **K. M. Ambili**, J.-P. St.-Maurice, and R. K. Choudhary (2012), On the sunrise oscillation of the F region in the equatorial ionosphere, **Geophy.Res.Lett.**, 39, L16102, doi:10.1029/2012GL052876.
4. **K. M. Ambili**, R. K. Choudhary, J.-P. St.-Maurice and Jorge L. Chau (2013), Nighttime vertical plasma drifts and the occurrence of sunrise undulation at the dip equator: A study using Jicamarca incoherent backscatter radar measurements, **Geophy.Res.Lett.**, 40, doi:10.1002/2013GL057837.
5. **K. M. Ambili**, R. K. Choudhary, and J.-P. St.-Maurice (2014), Longitudinal and seasonal variations in the occurrence of sunrise undulation at the dip equator: A study using Trivandrum and Jicamarca Digital Ionosonde measurements, **J. Geophys. Res.**, doi:10.1002/2014JA019783.
6. R.K. Choudhary, **K.M. Ambili**, Siddhartha Choudhury, and Anil Bhardwaj (2016), On the origin of the ionosphere at the Moon using results from Chandrayaan-1 S-Band Radio Occultation Experiment and a photochemical model. **Geophy.Res.Lett.**, doi:10.1002/2016GL070612.
7. K Unnikrishnan, H Sreekumar, RK Choudhary, VM Ashna, **K M Ambili**, PR Shreedevi, PB Rao (2017), A study on the evolution of plasma bubbles using the single station-multi-satellite and Multi-station-single satellite techniques, **J. Geophys. Res. Space Physics**, 122, 1- 11, doi: 10.1002/2016JA023503
8. **K.M. Ambili**, Sneha Susan Babu, R. K. Choudhary, On the relative roles of the neutral density and photo chemistry on the solar zenith angle variations in the V2 layer characteristics of the Venus ionosphere under different solar activity conditions, **Icarus**, 2018, 321, 661-670.
9. R. K. Choudhary, K. R. Bindu, Kumar Harshit, Rahul Karkara, K. M. Ambili, T. K. Pant, Devadas Shenoy, Chandrakanta Kumar, N. Hemanth Kumar Reddy, T. K. Rajendran, M. Nazer, and M. Shajahan, Dual Frequency Radio Science (DFRS) Experiment on-board Chandrayaan-II: a radio occultation technique to study temporal and spatial variations in the surface bound ionosphere at the Moon, **Current Science**, September 2019.
10. C. Vineeth, K M Ambili and T. K. Pant, Role of Equatorial Fountain for the delayed Response of Thermosphere O<sup>1</sup>D 630.0 nm Dayglow over the Dip Equator during an X-class Flare , **JGR Space Physics**, February 2020.

अंबिली के.एम.

वैज्ञानिक/इंजीनियर एस डि

फ़ोन : +९१ ४७१ २५६२११९

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### अनुसंधान क्षेत्र

अवलोकनों और मॉडलों का उपयोग करते हुए ग्रहीय आयनोस्फेरिक अध्ययन.

### शैक्षणिक योग्यता

डिग्री	वर्ष	विवरण
पी एचडी	२०१४	भौतिक विज्ञान; शोधग्रंथ का शीर्षक: "भू-आधारित/अंतरिक्ष जनित ऑप्टिकल और रेडियो प्रयोगों के सहयोग से भौतिकी आधारित आयनोस्फेरिक मॉडल का उपयोग करते हुए भूमध्यरेखीय और निम्न अक्षांश प्लाज्मा प्रक्रियाओं का एक अध्ययन"; केरल विश्वविद्यालय, त्रिवेंद्रम, भारत; पी एचडी सलाहकार: डॉ. अनिल भारद्वाज और डॉ. राज कुमार चौधरी.
एम एससी	२००८	भौतिकी (संघनित पदार्थ भौतिकी), मैंगलोर विश्वविद्यालय, भारत.

### प्रोफेशनल बैकग्राउंड

पद	समयांतराल	संस्थान
वैज्ञानिक	अप्रैल २०१८- वर्तमान	अंतरिक्ष भौतिकी प्रयोगशाला, वीएसएससी, इसरो, भारत
डीएसटी-इंस्पायर फैकल्टी	अप्रैल २०१५- अप्रैल २०१८	भारतीय अंतरिक्ष विज्ञान और प्रौद्योगिकी संस्थान, भारत
रिसर्च स्कॉलर रिसर्च एसोसिएट	और जनवरी २००९-अप्रैल २०१५	अंतरिक्ष भौतिकी प्रयोगशाला, वीएसएससी, इसरो, भारत

### पुरस्कार/सम्मान/स्वीकरण/अभिनंदन

- केरल राज्य, २०१८ द्वारा विज्ञान में "युवा प्रतिभा"
- उर्सि-गैस-२०१७, उर्सि-अप्रास्क-२०१६ और उर्सि-आरसीआरएस-२०१५ द्वारा युवा वैज्ञानिक पुरस्कार
- बेस्ट पेपर अवार्ड, राष्ट्रीय अंतरिक्ष विज्ञान संगोष्ठी, जनवरी, २०१९
- सर्वश्रेष्ठ पोस्टर पुरस्कार, केरल विज्ञान कांग्रेस, जनवरी २०१७
- डीएसटी से इंस्पायर फैकल्टी अवार्ड, दिसंबर २०१४

### प्रकाशन – १०

1. St-Maurice. J.-P, **K M Ambili**, R K Choudhary (2011), Local electrodynamics of a solar eclipse at the magnetic equator in the early afternoon hours, **Geophy.Res.Lett.**,38, L04102,doi:2010GL046085.

2. R K Choudhary, J-P. St.Maurice, **K M Ambili**, Surendra Sunda, B M Pathan (2011), The impact of the January 15,2010 annular eclipse on the equatorial and low latitude ionospheric densities, **J. Geophys. Res.**, doi:2011JA016504.
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6. R.K. Choudhary, **K.M. Ambili**, Siddhartha Choudhury, and Anil Bhardwaj (2016), On the origin of the ionosphere at the Moon using results from Chandrayaan-1 S-Band Radio Occultation Experiment and a photochemical model. **Geophys.Res.Lett.**, doi:10.1002/2016GL070612.
7. K Unnikrishnan, H Sreekumar, RK Choudhary, VM Ashna, **K M Ambili**, PR Shreedevi, PB Rao (2017), A study on the evolution of plasma bubbles using the single station-multi-satellite and Multi-station-single satellite techniques, **J. Geophys. Res. Space Physics**, 122, 1- 11, doi: 10.1002/2016JA023503
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9. R. K. Choudhary, K. R. Bindu, Kumar Harshit, Rahul Karkara, K. M. Ambili, T. K. Pant, Devadas Shenoy, Chandrakanta Kumar, N. Hemanth Kumar Reddy, T. K. Rajendran, M. Nazer, and M. Shajahan, Dual Frequency Radio Science (DFRS) Experiment on-board Chandrayaan-II: a radio occultation technique to study temporal and spatial variations in the surface bound ionosphere at the Moon, **Current Science**, September 2019.
10. C. Vineeth, K M Ambili and T. K. Pant, Role of Equatorial Fountain for the delayed Response of Thermosphere O<sup>1</sup>D 630.0 nm Dayglow over the Dip Equator during an X-class Flare , **JGR Space Physics**, February 2020.