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Ashish Kumar, Ph.D

Engineer-D (Electronics)

Education

<i>Qualification</i>	<i>Institute/Board/University</i>	<i>Passing Year</i>
Ph.D. (Environmental Science & Engg.)	IIT, Dhanbad, Jharkhand	2019
M.Tech (Electronics & Communication Engg.)	NIMS University, Rajasthan	2012
BE (Electronics Engg.)	Bharati Vidyapeeth University, Maharashtra	2006
Diploma (Electronics & Communication Engg.)	SLIET, Punjab	2003
Certificate course (eq. to 10+2 by MHRD)	SLIET, Punjab	2001
10th (Matriculation)	CBSE board	1999

Thesis

- Ph.D Thesis Title: *“Atmospheric Studies Using Remote Sensing and In-Situ Measurements over The Himalayan Region”*
- M.Tech Thesis Title: *“Signal Analysis and Processing of Mini-Profiler Echoes”*

Work/Research Experience

- Jan 2016 – present* **Engineer-D (Electronics)**
Aryabhata Research Institute of observational sciences, Nainital, India
Pay scale: Level -12; Rs.15600-39100 + G.P of Rs.7600/-
- Jan 2012 – Dec 2015* **Engineer-C (Electronics)**
Aryabhata Research Institute of observational sciences, Nainital, India
Pay scale: Rs.15600-39100/- + G.P of Rs.6600/-
- Aug 2007 – Dec 2011* **Engineer-B (Electronics)**
Aryabhata Research Institute of observational sciences, Nainital, India
Pay scale: Rs.15600-39100/- + G.P of Rs.5400/-
- Apr 2007 – Aug 2007* **Technical Assistant-‘B’**

National Atmospheric Research Laboratory (NARL), Gadanki, India
 Pay scale: Rs.5500-175-9000
Aug 2006 – Apr 2007 **Technical Assistant**
 National Atmospheric Research Laboratory (NARL), Gadanki, India
 Pay scale: Rs.5500 (consolidated)
June 2006 – Aug 2006 **Trainee (Quality & Testing division)**
 Finolex Cables Ltd. Pune, India
 Pay scale: Rs.5000 (consolidated)

Skills & Activities

Technical/ Scientific Skills Engineering – Electronics, Electrical, Environmental; Scientific software and hardware developments; Digital signal processing; RF/Microwave/Digital Test and measuring instruments handling and maintenance; Scientific data handling and maintenance; Data analysis; Satellite and ground based remote sensing instruments used in Atmospheric studies; LiDAR and RaDAR based remote sensing of aerosols, clouds, precipitation, and winds; In-situ measurements like radiosonde; Atmospheric Pollution; Climate change; Mountain meteorology; Atmospheric studies over Himalayan region; Boundary layer meteorology, Atmospheric measurements using AERONET, weather stations, and other ground based sensors.

Software skills Experience of programming in MATLAB, LabVIEW, C/C++, C#, XAML, Python, VHDL, Verilog; Experience in handling the tools like ArcGIS, QGIS, Origin, HDFView, SmartDraw, PCAA, LINPAR, TASM, IE3D, Microwave Office (AWR), Agilent's ADS, ModelSim, ISE foundation, AutoCAD, SWiX (SWF file creator), MathCAD, Cadence-Allegro, 4NEC2, Altair ElectroFlo and HyperWorks, Ansys, CST Studio etc.

Memberships

- Editorial Board Member - *Remote Sensing* (ISSN:2315-4632)
- Member - *International Association of Engineers* (ID: 105880)
- Member – *Vibha*, India (ID: 8581)
- Life Member - *Indian Society of Remote Sensing* (ID: L-5241)
- Senior Member – *International Union of Radio Science/ Union Radio-Scientifique Internationale* (Membership No. M184008863225)
- Reviewer- Environmental Pollution, Remote Sensing of Environment.

Interests Data handling, maintenance and analysis, Software and Hardware development, Exploring new and emerging scientific and technical tools, Technical and Scientific aspects of Satellite and ground based (RaDAR, LiDAR etc.) remote sensing tools, Travelling.

Personal details

<i>Date & place of birth</i>	1st March, 1984 Ranchi, Jharkhand
<i>Nationality</i>	Indian
<i>Marital Status</i>	Married
<i>Language (speak & write)</i>	Hindi, English

Journal Publications

- [1] **Ashish Kumar**, Narendra Singh, Anshumali: *Simulation and interactive approach based demonstration of pulse compression technique in atmospheric radar*. **SN Applied Sciences**, Springer, 1: 1678, 2019. <https://doi.org/10.1007/s42452-019-1737-0>.
- [2] Narendra Singh, **Ashish Kumar**, Anshumali, Jaydeep Singh, Debashis Nath: *Observations on the distribution of precipitation over northern India using joint CloudSat, CALIPSO and TRMM measurements*. **Remote Sensing Letters**, Taylor & Francis, 11(2): 117-126, 2020. <https://doi.org/10.1080/2150704X.2019.1692388>.
- [3] **Ashish Kumar**, Narendra Singh, Anshumali: *Observations on the distribution of clouds over northern India using joint CloudSat and CALIPSO measurements*. **Remote Sensing Letters**, Taylor & Francis, 10(6): 590-597, 2019. <https://doi.org/10.1080/2150704X.2019.1587198>.
- [4] **Ashish Kumar**, Narendra Singh, Anshumali, Raman Solanki: *Evaluation and utilization of MODIS and CALIPSO aerosol retrievals over a complex terrain in Himalaya*. **Remote Sensing of Environment (RSE)**, Elsevier, 206: 139-155, 2018. <https://doi.org/10.1016/j.rse.2017.12.019>.
- [5] **Ashish Kumar**, Narendra Singh, Anshumali: *Signal analysis for ground based LiDAR*. **Research Journal of Engineering Sciences**, 8(2): 17-22, 2019.
- [6] **Ashish Kumar**: *A Simple Approach for Designing a Filter on Microstrip Lines*. **Applied Engineering Letters: Journal of Engineering and Applied Sciences**, 4(1): 19-23, 2019. <https://doi.org/10.18485/aeletters.2019.4.1.3>.
- [7] **Ashish Kumar**: *A Simple Approach for Design and Fabrication of Wilkinson Power Divider on Microstrip Line*. **Journal of Engineering Design & Analysis**, 2(1): 1-4, 2019.
- [8] Samaresh Bhattacharjee, **Ashish Kumar**, Manish Naja: *Array factor optimization of an active planar phased array using evolutionary algorithm*. **International Journal of Antennas (IJANT)**, 2(3): 1-11, 2016. <https://doi.org/10.6084/m9.figshare.6280289.v1>
- [9] Narendra Ojha, Manish Naja, Tapaswini Sarangi, Rajesh Kumar, Piyush Bhardwaj, Shyam Lal, S. Venkataramani, Ram Sagar, **Ashish Kumar**, Harish Chandola: *On the processes influencing the vertical distribution of ozone over the central Himalayas: Analysis of yearlong ozonesonde observations*. **Atmospheric Environment**, Elsevier, 88: 201-211, 2014. <http://dx.doi.org/10.1016/j.atmosenv.2014.01.031>.

- [10] Tapaswini Sarangi, Manish Naja, Narendra Ojha, Rajesh Kumar, Shyam Lal, S. Venkataramani, **Ashish Kumar**, Ram Sagar, Harish Chandola: *First simultaneous measurements of ozone, CO, and NO_y at a high-altitude regional representative site in the central Himalayas*. *Journal of Geophysical Research: Atmospheres*, Wiley, 119(3): 1592–1611, 2014. <https://doi.org/10.1002/2013JD020631>.
- [11] **Ashish Kumar**, Abhishek Shrivastava, Samaresh Bhattacharjee, Phani Kumar, Manish Naja: *Generation, analysis and evaluation of bi-phase complementary pairs*. *International Journal of Advancements in Technology (IJoAT)*, ISSN 0976-4860, 3(4): 209-214, 2012.
- [12] Tarun Bangia, Prem Kumar Agarwal, **Ashish Kumar**, Sanjay Kumar Singh, Ram Sagar: *Opto-mechanical design, analysis and economical manufacture of a large aperture LIDAR receiver telescope*. *Journal of Engineering and Technology Research*, 3(6): 180-196, 2011.
- [13] Tarun Bangia, Amitesh Omar, Ram Sagar, **Ashish Kumar**, Samaresh Bhattacharjee, Arjuna Reddy, Prem Kumar Agarwal, Phani Kumar: *Study of atmospheric aerosols over the Central Himalayan region using a newly developed Mie light detection and ranging system: Preliminary results*. *Journal of Applied Remote Sensing*, SPIE, 5(1): 053521, 2011. <https://doi.org/10.1117/1.3579158>.
- [14] **Ashish Kumar**, Samaresh Bhattacharjee, Manish Naja, Phani Kumar: *Front-end Digital Signal Processing Scheme for 206.5 MHz Atmospheric Radar Application*. *International Journal of Advancements in Technology (IJoAT)*, ISSN 0976-4860, 2(1): 71-81, 2011.
- [15] Tarun Bangia, **Ashish Kumar**, Ram Sagar, Prem Kumar Agarwal, Sanjay Kumar Singh: *Development of Mie LIDAR system and initial cloud observations over Central Himalayan region*. *Scientific Research and Essays*, 6(4): 896-907, 2011.

Conferences/Symposiums/Workshops

- [1] Jaydeep Singh, Narendra Singh, **Ashish Kumar**, Ravi Shankar Singh: *Impacts of a pre-monsoon dust storm on the Himalayan snow cover using satellite-based observations*. URSI RCRS 2020, IIT (BHU), Varanasi, India, 12 - 14 Feb, 2020.
- [2] Akanksha Rajput, Narendra Singh, **Ashish Kumar**, Shantanu Rastogi: *Preliminary estimation of SNR threshold for 206.5 MHz ST Radar at ARIES, Nainital*. URSI RCRS 2020, IIT (BHU), Varanasi, India, 12 - 14 Feb, 2020.
- [3] Narendra Singh, **Ashish Kumar**, Vijay Kumar Soni: *Transport of dust and their influence over the glaciated surfaces in the Himalayan region*. The 29th International Laser Radar Conference (ILRC29), Hefei, Anhui, China, June 24-28, 2019.
- [4] **Ashish Kumar**, Narendra Singh, Anshumali: *Study on cloud types distribution over northern India using raDAR-liDAR (DARDAR)*. URSI Asia Pacific Radio Science Conference 2019. New Delhi, India, 09 - 15 March 2019. <https://doi.org/10.23919/URSIAP-RASC.2019.8738690>.
- [5] Narendra Singh, **Ashish Kumar**, Anshumali, Chandra Prakash, Chhavi P. Pandey: *Study on the satellite and ground based aerosol measurements over Himalayan region*. URSI Asia

- Pacific Radio Science Conference 2019, New Delhi, India, 09 - 15 March 2019.
<https://doi.org/10.23919/URSIAP-RASC.2019.8738218>.
- [6] Manish Naja, Samaresh Bhattacharjee, **Ashish Kumar**, Narendra Singh, Phani Kumar: *ARIES ST Radar (ASTRAD) at a mountain site (Nainital) in the central Himalayas*. URSI Asia Pacific Radio Science Conference 2019, New Delhi, India, 09 - 15 March 2019.
<https://doi.org/10.23919/URSIAP-RASC.2019.8738224>.
- [7] Narendra Singh, Narendra Ojha, Jaydeep Singh, **Ashish Kumar**, Vivek Panwar, Surendra K. Dhaka, Vijay Kumar Soni, S. Bist: *Boundary layer dynamics and the transport of pollutants over the Himalayan region: Observations and model simulations*. 5th International Skynet Workshop, New Delhi, India, 13-15 February, 2019.
- [8] Narendra Singh, **Ashish Kumar**, Anshumali: *Transport and influence of pollutants over Himalayan region*. National conference on Biogeochemical Cycles and Climate Change, IIT(ISM), Dhanbad, India, 11 August 2018.
- [9] Krishna Kumar Shukla, D.V. Phani Kumar, **Ashish Kumar**, K. N. Kumar, Manish Naja, M.V. Ratnam, Samaresh Bhattacharjee. *Signatures of Elevated aerosol layers over Central Himalayan region*. National Space Science Symposium (NSSS), 2012, S. V. University, Tirupati.
- [10] Tapaswini Sarangi, Manish Naja, Narendra Ojha, Rajesh Kumar, **Ashish Kumar**, Shyam Lal, Harish Chandola, Ram Sagar: *Variations in ozone and precursors over a high altitude site in the Central Himalayas*. National Space Science Symposium (NSSS), 2012, S. V. University, Tirupati.
- [11] Narendra Ojha, Manish Naja, Tapaswini Sarangi, Rajesh Kumar, Shyam Lal, S. Venkataramani, **Ashish Kumar**, Harish Chandola: *First Yearlong Ozone sonde observations over the central Himalayas: Influences of Biomass Burning and Downward Transport*. AGU Fall Meeting, 3-7 Dec, 2012, San Francisco, USA.
- [12] Narendra Ojha, Manish Naja, Tapaswini Sarangi, Rajesh Kumar, K. P. Singh, Y. Kant, Shyam Lal, S. Venkataramani, **Ashish Kumar**, Harish Chandola: *Tropospheric Ozone variations over the Northern India: Balloon-borne and surface based measurements*. IGAC-2012, 17-21 Sept, 2012, Beijing, China.
- [13] Narendra Ojha, Manish Naja, Rajesh Kumar, Tapaswini Sarangi, **Ashish Kumar**, Shyam Lal, S. Venkataramani, K. P. Singh, Harish Chandola: *Tropospheric ozone distribution over the Northern India: Balloonborne and surface based measurements*. Indo-German workshop on air quality and climate change (CHOP-C), 16-18 Jan, 2012, IITM, Pune.
- [14] Tapaswini Sarangi, Manish Naja, Narendra Ojha, Rajesh Kumar, **Ashish Kumar**, Shyam Lal, Harish Chandola, Ram Sagar: *Variations in ozone and precursors over a high altitude site in the central Himalayas*. Indo-German workshop on air quality and climate change (CHOP-C), 16-18 Jan, 2012, IITM, Pune.
- [15] Manish Naja, Narendra Ojha, Tapaswini Sarangi, Piyush Bhardwaj, Rajesh Kumar, Narendra Singh, **Ashish Kumar**, Shyam Lal, Ram Sagar: *Influences of regional pollution over the Northern India: Ozone soundings from the central Himalayas*. 39th COSPAR Scientific Assembly, 14-22 July, 2012, Mysore.

- [16] Tapaswini Sarangi, Manish Naja, Narendra Ojha, Rajesh Kumar, Shyam Lal, S. Venkataramani, **Ashish Kumar**, Harish Chandola, Ram Sagar: *Variabilities and inter-relation among ozone, CO, NO_y and SO₂ over the Central Himalayas*. COSPAR-2012, Mysore.
- [17] Narendra Ojha, Manish Naja, Tapaswini Sarangi, Rajesh Kumar, **Ashish Kumar**, Shyam Lal, S. Venkataramani, K. P. Singh: *Balloon borne and surface measurement of Tropospheric ozone over the Northern India*. In-house Meeting held at ARIES, Manora Peak during April 19-20, 2012.
- [18] Manish Naja, Samaresh Bhattacharjee, Narendra Singh, Chandra Prakash, **Ashish Kumar**, D. Phani Kumar, G. Viswanathan, Ram Sagar: *Upcoming ST Radar at Nainital over Central Himalayas*. Asia Oceanic Geosciences Society (AOGS) International Conference 2010, Hyderabad, India, 5-9 July, 2010.
- [19] **Ashish Kumar**, V. K. Anandan, Samaresh Bhattacharjee, Chandra Prakash, Manish Naja, Prasada Rao, C. Sudhir, Suresh Damle, G. Viswanathan, Ram Sagar: *FPGA Based Implementation Of DSP Scheme for Upcoming 206.5 MHz ST Radar at ARIES Nainital, India*. MST-12 Radar International Conference at University of Western Ontario, Canada, 22 – 24 May, 2009.
- [20] Samaresh Bhattacharjee, Manish Naja, Chandra Prakash, **Ashish Kumar**, Prasada Rao, Balakrishnan, C. Sudhir, Suresh Damle, G. Viswanathan, P. Srinivasulu, Ram Sagar: *Design aspects of the antenna array for ST Radar in central Himalayan region at Nainital, India*. MST-12 Radar International Conference at University of Western Ontario, Canada, 22 – 24 May, 2009.
- [21] Chandra Prakash, Samaresh Bhattacharjee, Manish Naja, **Ashish Kumar**, Narendra Singh. *Peak Power Aperture calculation for ARIES ST Radar by measuring Cn₂ in Shivalik Range of Himalaya at Nainital, India*. MST-12 Radar International Conference at University of Western Ontario, Canada, 22 – 24 May, 2009.