



# Dr. Avinash Kumar

## Curriculum Vitae

**National Centre for Polar and Ocean Research**  
Ministry of Earth Sciences, Govt. of India  
Headland Sada, Vasco-da-Gama, Goa - 403 804, India

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### Present Position

August 2017 - **Scientist E and Scientist-in-charge (SIC)**, *Outreach and Cooperation*,  
Continue *National Centre for Polar and Ocean Research (NCPOR)*, Ministry of Earth  
Sciences, Govt. of India, Vasco-da-Gama, Goa, India, [www.ncpor.res.in](http://www.ncpor.res.in).

### Past Position

July 2017 – **Scientist D**, *National Centre for Polar and Ocean Research (NCPOR)*,  
June 2021 Vasco-da-Gama, Goa, India.  
April 2013 – **Scientist C**, *National Centre for Polar and Ocean Research (NCPOR)*,  
June 2017 Vasco-da-Gama, Goa, India.  
September **Research Scientist B**, *National Centre for Polar and Ocean Research*  
2010 – April (NCPOR), Vasco-da-Gama, Goa, India.  
2013

### Education

2006–2012 **Doctor of Philosophy (Ph.D.)**, in *Marine Geology*, Department of Ma-  
rine Geology, Mangalore University Mangalagangotri - 574 199 Karnataka,  
India.  
2003–2005 **Master of Science (M.Sc.)**, in *Marine Geology*, Cochin University of  
Science and Technology, Kochi, India.  
1999–2002 **Bachelor of Science (B.Sc.)**, in *Geology, Physics and Chemistry*, Patna  
University, Bihar, India.

### Masters and pre-Ph.D. Projects

- Title : Distribution of Coastal Cliffs of Kerala, India: Their Mechanisms of Failure and Related Human Engineering Response.
- Title : Impact Assessment and Generation of Coastal Information System between Ullal and Kundapur, Karnataka.

## Doctoral Thesis

Title *Morphodynamics of River, Estuary and Coastal Regions of Southern Karnataka, India: Remote Sensing and GIS Approaches*

Supervisor Professor K. S. Jayappa, Department of Marine Geology, Mangalore University Mangalagangothri - 574 199 Karnataka, India

## Technical Skills (Computer)

Operating Systems: Windows, Linux and Working experience on High Performance Computing Clusters (HPC)

Languages: Python, and Linux shell script

Image processing and plotting: ERDAS Imagine, ENVI, ArcGIS, Climate Data Operator (CDO), PyFerret, MATLAB, SigmaPlot, OriginPro, ODV, Grads and NCL

Satellite Data: Good experience in GeoTiff, hdf and netcdf file format data handling

Other packages:  $\text{\LaTeX}$ , Office (Microsoft and open)

Graphics and Designing packages: Adobe Photoshop, Adobe Illustrator, Adobe InDesign, CorelDraw, Google SketchUp

## Research Experience

- Research on role of polar and ocean with respect to global climate change and studied multi- and intra-decadal variabilities of Antarctic and Arctic sea-ice and the interaction between ocean-atmosphere in a coupled mechanism.
- Study of decadal Climate variability (viz., ENSO, SAM, PDO, AO, AMO etc.) and their predictability in different models in CMIP5 (Coupled Model Inter-comparison Project Phase 5).
- Prediction modelling of Antarctic ice shelves using satellite remote sensing and numerical model.
- Worked on morphology of submarine channel-levee systems and sedimentary sources and Glacial-interglacial productivity in the Indian EEZ and Central Indian Ridge were studied.
- Worked on (i) coastal and fluvial processes and hydrodynamic modelling; (ii) generation of a coastal dynamic model for past and future shoreline prediction to improve the coastal zone management system; (iii) development of algorithm for the retrieval of suspended sediment concentration using IRS-P4 Ocean Colour Monitor data; and (iv) impact assessment of sea level rise and anthropogenic activities, on estuarine and coastal morphology.

## Fellowships and Awards

- April 2026 Research work received the **Outstanding Early Career Researcher Award 2025** for the paper titled “The role of atmospheric and oceanic factors on the record low Antarctic sea ice extent of 2023” published in *Global and Planetary Change*, authored by M. Swathi, Avinash Kumar, Juhi Yadav, Rahul Mohan.
- April 2025 Received the **Outstanding Employee Award 2024 by the National Centre for Polar and Ocean Research, Ministry of Earth Sciences (MoES)** on the occasion of the NCPOR 25<sup>th</sup> Foundation Day Silver Jubilee Celebration.
- April 2025 Research work received the **Outstanding Early Career Researcher Award 2024** for the paper titled “Contrasting response of regional spring Arctic Sea ice variations on Indian summer monsoon rainfall” published in *Remote Sensing of Environment*, authored by Juhi Yadav, Avinash Kumar, Seong-Joong Kim, Rohit Srivastava, Rahul Mohan, and M. Ravichandran.
- July 2021 Received the **Certificate of Merit Award by the Ministry of Earth Sciences (MoES)** on the occasion of the MoES Foundation Day on 27<sup>th</sup> July 2021.
- December 2020 Awarded the prestigious National Award "**ATAL VAGYAANIKA SHIKHAR SAMMAN-2020**" in the 7<sup>th</sup> Atal Award Ceremony on 24th December 2020 organized at Vigyan Bhawan, New Delhi. Received this prestigious award in the category of excellence in Science & Technology.
- April 2020 – Awarded for **Korean Polar Research Institute (KOPRI) Asian Polar Science Fellowship Program 2020 under the category of Established polar scientists** on his proposed research on "Mechanism of Changes in the Arctic Sea-ice and its Possible Connections with the Lower Latitudes Weather Patterns".
- December 2019 Received **Best Paper Award** in ORAL presentation entitled "**Role of Ocean-Atmosphere Coupled Mechanism in unprecedented Decline of Arctic Sea-ice**" during the **International Symposium on 'Advances in Coastal Research with Special Reference to Indo Pacific-2019' (AdCoRe IP-2019)** during 17-19 December 2019 at National Centre for Coastal Research (NCCR), Chennai.
- April 5, 2019 Received Certificate in **Recognition and Appreciation of Outstanding Contribution for Scientifically Designing the Logo for the National Centre for Polar and Ocean Research (NCPOR)**, Goa, the award received on the NCPOR Foundation Day of April 5, 2019.
- May 2017 – Received financial grant from PICES/ICES to participate in **3rd Early Career Scientist Conference (ECS3) on Climate, Oceans and Society: Challenges and Opportunities** held in Busan, South Korea, hosted by the Korea Institute of Ocean Science and Technology (KIOST)
- June 2017
- September 2016 Received **First Prize** in ORAL Scientific presentation titled "**Role of Global Warming on Polar Sea Ice Variability**" competition held on the occasion of Hindi Saptah 2016 at NCPOR, Goa.

- September 2015 Received **Second Prize** in ORAL **Scientific presentation titled "Role of physical forces in the sea-ice variability in Antarctica"** competition held on the occasion of Hindi Saptah 2015 at NCPOR, Goa.
- April 26, 2010 – April 28, 2010 Foreign Travel Grant received from Department of Science and Technology (DST), New Delhi, India, to attend the First International Applied Geological Congress (IAGC) in Mashhad, IRAN
- October 2008 – September 2010 Senior Research Fellowship award (2008) from Council for Scientific and Industrial Research (CSIR), New Delhi, India, for proposed research work on Coastal Geomorphology and Oceanography of Southern Karnataka - A Study Based on Remote Sensing and GIS
- August 2005 – January 2008 Junior Research Fellowship award (2005) from Department of Science and Technology (DST), New Delhi, India, for the project on Impact Assessment and Generation of Coastal Information System between Ullal and Kundapur, Karnataka

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## Sponsored Scientific Project

- 2019 – 2021 **Co-Investigator** project entitled "**Predictive Tool for Arctic Coastal Hydrodynamics and Sediment Transport**" funded to Mohammad Saud Afzal (PI), Department of Civil Engineering, IIT Kharagpur by Ministry of Earth Sciences (MoES), under the of NCPOR//PACER Outreach Programme (POP) Initiative (File No:NCPOR/MoES/AS-Polar Research Proposals/2019, Project Cost: INR 47,73,600 Lakhs.)

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## Research Students

### Students for Ph.D.

- Sep 2021-Dec 2026 Ms. Juhi Yadav, UGC- Research Fellow, completed her PhD "Polar sea-ice variability and dynamics: linkage between ocean-atmospheric forcing" at National Centre for Polar and Ocean Research, Goa, India.
- July 2021 to Till now Ms. Swathi M, CSIR- Senior Research Fellow, working on "Sea ice variability over Antarctica and their response to large scale climate indices." at National Centre for Polar and Ocean Research, Goa, India.
- April 2024 to July 2025 Ms. Ananya Sharma, Junior Research Fellow, working on "Spatio-temporal Variability of Arctic sea ice and its relationship with Ocean-Climate forcing." at National Centre for Polar and Ocean Research, Goa, India.
- March 2019 to December 2024 Co-Guide of Ms. Aakriti Srivastava, PhD Research Fellow, working on "Coastal Geomorphology and Sea ice Dynamics of Southern Hemisphere: Remote Sensing and Modelling Based Approach" Barkatullah University, Bhopal and NCPOR, Goa.

### Students for Dissertation

- Ms. Maitreyee Biswas carried out the project on “Arctic Sea Ice Decline and Precipitation Variability: Insights from the Satellite Records” for the degree of Master of Science in Environment and Disaster Management from Ramakrishna Mission Vivekananda Educational and Research Institute, India during January 2026 – June 2026.

- Ms. Afrah Shaik carried out the project on “Spatio-temporal Variability of Sea ice and Ocean–Atmosphere feedback in the Pacific Sector of the Arctic Ocean” for the degree of Master of Science in Geology from Department of Marine Geology and Geophysics, Cochin University of Science and Technology, Kochi, Kerala, India during January 2026 – May 2026.
- Ms. Faheema Jasmin Gafoor carried out the project on “Trends in Arctic Sea ice and its relation to Climate Variables” for the degree of Master of Science in Geology from Farook College (Autonomous), Kozhikode, Kerala, India during April 2025 – June 2025.
- Ms. Jayashree carried out the project on "Potential Drivers of the Record Low Ozone Values in the Arctic Over the last three decades" for the degree of Master of Science in Marine Geology from Mangalore University, India during May 2023 - August 2023.
- Ms. Saniya Fazal carried out the project on "Investigation on Abrupt Decline in Winter Arctic Sea-ice Cover using Climatic Modeling and Reanalysis data" for the degree of M.Sc. in Remote Sensing and Geoinformatics from Maharshi Dayananda Saraswati University, Rajasthan, India during March 2019 to August 2019.
- Mr. Tanojit Paul carried out the project on "Multi-scale Variability of Sea Ice Retreat and Advance in the Barrent-Kara Sea" for the degree of Master of Science in Geology, Manipal Institute of Technology, Karnataka, India during May 2019 to July 2019.
- Ms. Steffie Tom carried out the project on "Study of Climate Variability in Antarctica" for the degree of Master of Engineering in Industrial automation & RF Master in Science in Geoinformatics and Remote sensing, Goa College of Engineering - Farmagudi, of Goa University during July 2017 to June 2018.
- Ms. Sushree Sangita Parida carried out her the dissertation on "Sea Ice Extent Variability and Trends of Arctic Region: Understanding the Correlation with Climatological Variables" for the degree of M. Sc. Remote Sensing and GIS, Kumaun University, Almora, Uttarakhand, during January 2018 to June 2018.
- MS. Ankita Banerjee carried out her the Summer internship on "Sea Ice Variability and Dynamics Studies of Antarctica using Advanced Remote Sensing Techniques" for the degree of M.Sc. in Geoinformatics, Birla Institute of Technology (Mesra), Ranchi during May 2018 to July 2018.
- Ms. Ribjyoti Gogoi carried out her dissertation on "Understanding the Antarctic Sea Ice Variability and Changes under Warming Atmospheric and Oceanic Conditions" for the degree of Master in Science in Geoinformatics and Remote sensing, Amity University, Noida, India during January 28, 2017 to May 26, 2017.
- Ms. Aritrika carried out her dissertation on "Changes in Coastline Morphology of Ross Island and McMurdo Ice Shelf, East Antarctica: A Study Based on Remote Sensing and Statistical Methods" for the degree of Master of Sciences in Applied Geology and Geoinformatics, School of Earth Sciences, Department of Geology, Central University of Karnataka during Jan to May 2017.
- Ms. Aakriti Srivastava carried out her dissertation on "Morphological Changes in Amery Ice Shelf, Eastern Antarctica: Insights from Remote Sensing and Statistical based Approach" for the award of Degree of Master of Technology (M.Tech.) in Remote Sensing & Geographic Information Systems, affiliated from Barkatullah University, Bhopal during August 01, 2016 to January 04, 2017.

- Mr. Kiran B.S. carried out his dissertation on "Coastal processes and Mangrove Distribution in the Pichavaram Region, Southeast Coast of India: Insights from Remote sensing and GIS" for the award of Degree of Master of Science (M.Sc.) in Marine Geology, affiliated from Mangalore University, Mangalore during January, 2015 to May, 2015.
- Mr. S. Shivakumar carried out his dissertation on "Role of Coastal Processes on Estuarine and Shoreline Morphodynamics along Southern Coastal Karnataka, India: Insights from Remote sensing, GIS and Statistical methods" for the award of Degree of Master of Technology (M.Tech) in Geo-Technology & Geo-informatics, Bharathidasan University, Tiruchirappalli, during January, 2014 to June 2014.
- Mr. Akhil Babu carried out his Dissertation on "Arctic sea-ice trends and variabilities in the last three decades" for the award of Degree of Master of Technology (M.Tech.) in Geographic Information System, NIIT University, Rajasthan, during December, 2013 to June 2014.
- Mrs. Sunisha S. carried out her dissertation on "Sea ice Trend Variability Analysis and Modeling of Sea Ice Motion" using Remote Sensing & GIS for the award of Degree of Master of Technology (M.Tech.) in Computer and Information Science, Sarabhai Institute of Science & Technology, Trivandrum, affiliated from Cochin University of Science & Technology, Kerala during August, 2013 to March, 2014.
- Ms. S. Janani, B.Tech. in Geoinformatics and Geotechnology, Centre for Remote Sensing, Bharathidasan University for one and a half months summer training on "Antarctic Sea Ice extent Studies using GIS techniques" during June to July, 2013.

## Participation in Expeditions

- December 19, 2015 to April 1, 2016 Participated in the 35th Indian Scientific Expedition to Antarctica for in-situ oceanographic and aerial photographic data between Bharati and Maitri. In this expedition Aerial/field reconnaissance study was carried out to understand the ice shelf morphology and changes along the coastal regions East Antarctica
- November 5, 2012 to January 17, 2013 As a **Chief Scientist** onboard ORV Sagar Kanya SK-301 Cruise on Hydrothermal Studies: Exploration of Seafloor Massive Sulfide Hydrothermal Deposits along the Central Indian Ridge
- January 2 to January 31, 2012 As a **Deputy Chief Scientist** of cruise No. SK-292 onboard ORV SagarKanya for 29-days. I have significantly contributed in the multi-beam bathymetry data acquisition and processing activities as well as gravity core collection along Laccadive region of Arabian Sea
- March 5, 2011 to April 3, 2011 ORV Sagar Kanya (SK-282) cruise for bathymetry survey using multi-beam echo sounder, side-scan SONAR as well as gravity core collection along off Andaman region of Bay of Bengal
- April 17, 2009 to May 1, 2009 ORV Sagar Kanya (SK-258) cruise to study the role of Trichodesmium blooms in modulating the nitrogen biogeochemistry in the Arabian Sea during the inter-monsoon period

## Conference & Seminar Organized

- September 19-20, 2025 Contributed significantly to the organisation and outreach activities of the **Asian Forum for Polar Sciences (AFoPS) Annual General Meeting 2025** held at Goa, India, hosted by National Centre for Polar and Ocean Research, Goa bringing together delegates from leading Asian polar research institutions to strengthen international collaboration in polar science.
- September 16-18, 2025 Convened a Conference on “**Fourth National Conference on Polar Sciences (NCPS-2025)**” for the students, researchers, scientists and academicians at National Centre for Polar and Ocean Research, Goa India.
- May 20-30, 2024 Worked as a Coordinator of Organising Committee of ATCM46 to organise “**46th Antarctic Treaty Consultative Meeting (ATCM46) and 26th Committee on Environmental Protection (CEP26)**.” hosted by MoES-NCPOR in Kochi India
- May 16-19, 2023 Convened a Conference on “**National Conference on Polar Sciences (NCPS-2023)**” for the students, researchers, scientists and academicians at National Centre for Polar and Ocean Research, Goa India.
- August 01-10, 2022 Worked as a Coordination Committee Member of SCAR 2022 to organise “**Tenth SCAR Open Science Conference (SCAR-OSC 2022)**” held as Virtual Conference organised by Ministry of Earth Sciences (MoES) National Centre for Polar and Ocean Research, Goa India
- August 12-14, 2021 As a Co-Convenor, organised “**Seventh National Conference of the Ocean Society of India (OSICON-2021)**” at National Centre for Polar and Ocean Research, Goa India
- August 20-22, 2019 Convened a Conference on “**National Conference on Polar Sciences (NCPS-2019)**” for the students, researchers, scientists and academicians and “**Young Polar Scientist Meet (YPSM)**” for young research scholars at National Centre for Polar and Ocean Research, Goa India
- November 19-20, 2018 Associated with arrangement and coordination on **Indo-European polar science collaboration H2020 call on Arctic: Indo-European meeting** held at ESSO-NCPOR to explore and share their experiences and upcoming opportunities
- October 28 to November 2, 2018 Associated as an organising committee member and conducted the **Winter School on "The Arctic Ocean: atmosphere, ice and ocean interactions - implications for future climate and human activities"** held at ESSO-NCPOR
- May 16-17, 2017 Convened a Conference on “**National Conference on Polar Sciences (NCPS-2017)**” for the students, researchers, scientists and academicians at National Centre for Polar and Ocean Research, Goa India

## Session Organised in International Conference

- **Lead Convenor** of a Session 5 titled “Physical drivers and climate implications of Antarctic sea ice variability and change” in the 11th Scientific Committee on Antarctic Research (SCAR) Open Science Conference, held in Pucon, Chile, from August 19-23, 2024.
- **Co-Convenor** of a Session 3 titled “Polar Climate Change, Variability, and Teleconnections in the Past, Present, and Future” in the 11th Scientific Committee on Antarctic Research (SCAR) Open Science Conference, held in Pucon, Chile, from August 19-23, 2024.
- **Co-Convenor** of a Session titled “Sea ice in the atmosphere-ice-ocean-biosphere system: How, where and why is it changing, and what are the effects?” in the 11th Scientific Committee on Antarctic Research (SCAR) Open Science Conference, held in Pucon, Chile, from August 19-23, 2024.
- **Lead Convenor** of a Session ID:15 – “Arctic sea ice changes: Causes and their effect on weather and climate in lower latitudes” Arctic Science Summit Week (ASSW) 2023 held in Vienna (Austria) from 17th – 24th February 2023.

## Editor in Journal Special Issue

- **Avinash Kumar, Managing Editor (2021) in a special issue title "Polar Studies - Window to the Changing Earth"** in *Polar Science Elsevier journal*, Volume 30, December 2021. The special issue was edited by Guest Editors: Avinash Kumar, NCPOR India; John Turner, BAS, UK; K.P Krishnan, NCPOR India; Naresh Chandra Pant, Delhi University, India; Rahul Mohan, NCPOR India; Satoshi Imura, National Institute of Polar Research (NIPR), Japan; Seong-Joong Kim, Korea Polar Research Institute (KOPRI), South Korea. <http://www.sciencedirect.com/journal/polar-science/vol/30/suppl/C>
- **Avinash Kumar, Co-Editor (November 2025 – Present)** for the proposed Research Topic titled “**Climate Variability and Dynamics**” in *Frontiers in Climate*. His role includes contributing to the development of the scientific scope, identification of contributors, and coordination of the peer-review process in collaboration with the editorial office and subject experts from leading climate science institutions in India. <https://www.frontiersin.org/research-topics/75107/climate-variability-and-dynamics>

## Editor or Associate Editor in Journal

- **Avinash Kumar, Associate Editor and Editorial Board Member (January 2023 – Present)** in the *Journal of the Indian Association of Sedimentologists*. He contributes to manuscript handling, peer-review coordination, and maintaining scientific quality in the fields of sedimentology, coastal processes, and Earth system sciences. <https://indiansedimentologists.com/>

## Granted Patents / Copyrights

- **Avinash Kumar**, Co-inventors of invention "Arctic Coastal Bluff Erosion Protector under combined wave-current flows (Honeycomb structure with geosynthetic bags)" dated 06/03/2023.

## Publications

Google Scholar Profile: [https://scholar.google.co.in/citations?user=J7G\\_AkLAAAAAJ&hl=en](https://scholar.google.co.in/citations?user=J7G_AkLAAAAAJ&hl=en)  
 ORCID (Open Researcher and Contributor ID): 0000-0002-1552-9156

### Publication Statistics

Citation indices	Since 2007 (as on April, 2026)
Citations	1515 (as per <a href="#">Scopus</a> )
h-index	20 (as per <a href="#">Scopus</a> )
i10-index	26 (as per <a href="#">Google Scholar</a> )

### Peer-reviewed Journals

1. Sunil, A., P. Kumar, A. Singh, A. Agarwal, **Avinash Kumar**, S.Y. Kim, and Rajni (2026). Indian Ocean Sea Surface Temperature Modulates the Arctic Oscillation: A Multi-Model Assessment Using CMIP6. *International Journal of Climatology*, 46(4), e70259. <https://doi.org/10.1002/joc.70259>
2. Sunil, A., P. Kumar, A. Singh, A. Agarwal, **Avinash Kumar**, S.Y. Kim, and Rajni (2025). Assessing the Impact of Climate Modes on Extreme Arctic Sea Ice Using Reanalysis Data. *International Journal of Climatology*, 45(15), e70121. <https://doi.org/10.1002/joc.70121>
3. Swathi M, **Avinash Kumar**, Juhi Yadav, and Rahul Mohan (2025). The role of atmospheric and oceanic factors on the record low Antarctic sea ice extent of 2023 *Global and Planetary Change*, <https://doi.org/10.1016/j.gloplacha.2025.104858>(Impact Factor: 4.0)
4. Swathi M, Aakriti Srivastava, **Avinash Kumar**, Juhi Yadav, Dinesh Chandra Gupta, and Rahul Mohan (2025). Trends in Antarctic Sea Ice and Albedo: Impacts of Ocean-Atmospheric Processes *International Journal of Climatology*, <https://doi.org/10.1002/joc.8791> (Impact Factor: 3.60)
5. Juhi Yadav, **Avinash Kumar**, Seong Joong Kim, Rohit Srivastava, Rahul Mohan, and Ravichandran M. (2024). Contrasting response of Regional Spring Arctic Sea Ice Variations on Indian Summer Monsoon Rainfall. *Remote Sensing of Environment*, 311, 114247. <https://doi.org/10.1016/J.RSE.2024.114247> (Impact Factor: 11.1)
6. Ramakant Prasad, Prashant Kumar, Anurag Singh, Anushka Sunil, **Avinash Kumar**, Anindita Patra and Rajni (2025). Trend Analysis of Extreme Wind and Wave Height at Key Port Locations Along the Indian Coastline. *Thalassas*, 41, 5. <https://doi.org/10.1007/s41208-024-00762-7>
7. Aakriti Srivastava, **Avinash Kumar**, Juhi Yadav, Dinesh Chandra Gupta, Rahul Mohan (2023). Morphological changes and future projections of the Getz Ice shelf, western Antarctica—A statistical and geospatial approach. *Regional Studies in Marine Science* Elsevier <https://doi.org/10.1016/j.rsma.2023.103144> (Impact Factor: 2.1)
8. Swati Nagar, Yogesh Ray, Rakesh Rao, **Avinash Kumar**, and Rahul Mohan, (2023). International collaboration- An indispensable tool for Antarctic research: Status report of India's endeavours on the icy continent. *Polar Science*, 38, 101003. <https://doi.org/10.1016/J.POLAR.2023.101003>
9. Bishakha Kundu, **Avinash Kumar**, Aakriti Srivastava, Debrupa Chatterjee, Fumming Xie, Dharmaveer Singh (2023). Estimating spatio-temporal changes in front edge of the Ronne Ice Shelf in context of climate change using remote sensing based integrated

approach. *Polar Science* Elsevier <https://doi.org/10.1016/j.polar.2023.100967> (Impact Factor: 1.8)

10. Swathi, M, **Avinash Kumar**, and Rahul Mohan, (2023). Spatiotemporal Evolution of Sea Ice and Its Teleconnections with Large-Scale Climate Indices over Antarctica, *Marine Pollution Bulletin*, 188. 114634 <https://doi.org/10.1016/j.marpolbul.2023.114634>(Impact Factor: 5.3)
11. Juhi Yadav, **Avinash Kumar**, and Rahul Mohan, (2022b). Atmospheric precursors to the Antarctic sea ice record low in February 2022 *Environmental Research Communications* IOP Publishing 4 121005 <https://doi.org/10.1088/2515-7620/aca5f2>(Impact Factor: 2.5)
12. Juhi Yadav, **Avinash Kumar**, Aakriti Srivastava, Rahul Mohan, (2022a). Sea ice Variability and Trends in the Indian Ocean Sector of Antarctica: Interaction with ENSO and SAM *Environmental Research* Volume 212, Part D: 113481 <https://doi.org/10.1016/j.envres.2022.113481>(Impact Factor: 7.7)
13. **Avinash Kumar**, Imura S, Kim S J, Krishnan K P, Mohan R, Pant N C and Turner J (2021). Polar Studies - Window to the changing Earth *Polar Science* Volume 30: 100767 <https://doi.org/10.1016/j.polar.2021.100767> (Impact Factor: 2.35)
14. Ravindran, S, V. Pant, A. K. Mitra and **Avinash Kumar**(2021). Spatio-temporal variability of sea-ice and ocean parameters over the Arctic Ocean in response to a warming climate, *Polar Science* Volume 30: 100721 <https://doi.org/10.1016/j.polar.2021.100721> (Impact Factor: 2.35)
15. Shetye S S, Mohan R, Patil S and **Avinash Kumar** (2021). Diatom distribution in the Enderby Basin, East Antarctica, *Polar Science* Volume 30: 100748 <https://doi.org/10.1016/j.polar.2021.100721> (Impact Factor: 2.35)
16. Islam M A, Lubbad R, Amiri S A G, Isaev V, Shevchuk Y, Uvarova A V, Afzal M S and **Avinash Kumar** (2021). Modelling the seasonal variations of soil temperatures in the Arctic coasts, *Polar Science* 30 100732 <https://doi.org/10.1016/j.polar.2021.100732> (Impact Factor: 2.35)
17. **Avinash Kumar**, Juhi Yadav, and Rahul Mohan (2021) Seasonal sea-ice variability and its trend in the Weddell Sea sector of West Antarctica, *Environmental Research Letters* Volume 16, Issue 2.<https://doi.org/10.1088/1748-9326/abdc88> (Impact Factor: 5.8)
18. **Avinash Kumar**, Juhi Yadav, and Rahul Mohan (2021) Spatio-temporal change and variability of Barents-Kara Sea ice, in the Arctic: Ocean and atmospheric implications, *Science of The Total Environment* (753), 142046.<https://doi.org/10.1016/j.scitotenv.2020.142046> (Impact Factor: 8.2)
19. **Avinash Kumar**, Aakriti Srivastava, Juhi Yadav, and Rahul Mohan (2020). Spatio-temporal changes and prediction of Amery ice shelf, East Antarctica: A remote sensing and statistics-based approach, *Journal of Environmental Management, Elsevier Publications* (Impact Factor: 8.0)
20. Juhi Yadav, **Avinash Kumar**, and Rahul Mohan (2020). Dramatic decline of arctic sea-ice linked to global warming. *Natural Hazard, Springer Publications* Volume 103, pages 2617–2621.<https://doi.org/10.1007/s11069-020-04064-y> (Impact Factor: 3.3)
21. **Avinash Kumar**, Juhi Yadav, and Rahul Mohan (2020). Global warming leading to alarming recession of Arctic sea-ice cover: Insights from Remote Sensing obser-

vations and model reanalysis, *textit Heliyon*, Elsevier Publications Volume 6, Issue 7. <https://doi.org/10.1016/j.heliyon.2020.e04355> (Impact Factor: 3.4)

22. Mohan, R., Roy, S.K., Meloth, T., Anilkumar, N., Krishnan, K.P., Sabu, P., **Avinash Kumar**, B S, M., Patil, S.M., Venkatachalam, S., Pant, N.C., (2020). Recent Indian contributions from the polar realm, *Proc. Indian Natl. Sci. Acad.* Volume 86, Issue 1, Pages 569–583. <https://doi.org/10.16943/ptinsa/2020/49806>
23. Swati N, **Avinash Kumar**, and Rahul Mohan (2019) Towards Polar Research: Enthusing India's young minds, *Geography and You*, 19(16):44-48.
24. Jena B, **Avinash Kumar**, Ravichandran M and Stefan Kern (2018) Mechanism of sea-ice expansion in the Indian Ocean sector of Antarctica: Insights from satellite observation and model reanalysis, *PLOS ONE*, 13(10) <https://doi.org/10.1371/journal.pone.0203222> (Impact Factor: 2.77)
25. Singh S.M, **Avinash Kumar**, Sharma P., Mulik R.U., Upadhyay A.K., Ravindra R. (2017) Elemental variations in glacier cryoconites of Indian Himalaya and Spitsbergen, Arctic, *Geoscience Frontiers*, Volume 8, Issue 6, Pages 1339-1347 (Impact Factor: 4.2)
26. **Avinash Kumar**, Kurian P.J., Warriar A.K., Shankar R., Vineesh T.C. and Ravindra R. (2016) Sedimentary sources and processes in the eastern Arabian Sea: Insights from environmental magnetism, geochemistry and clay mineralogy, *Geoscience Frontiers*, Volume 7, Issue 2, Pages 253–264 (Impact Factor: 4.2)
27. Jena B., Kurian P.J., and **Avinash Kumar** (2016) Morphology of submarine channel-levee systems in the eastern Bay of Bengal near Andaman region, *Journal of Coastal Conservation* Volume 20, Issue 3, Pages 211–220 (Impact Factor: 1.16)
28. **Avinash Kumar**, Manjunatha B.R. and Kurian P.J. (2015) Glacial-interglacial productivity contrasts along the eastern Arabian Sea: Dominance of convective mixing over upwelling, *Geoscience Frontiers* Volume 6, Issue 6, Pages 913 –925 (Impact Factor: 8.5)
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30. **Avinash Kumar**, Deepika, B. and Jayappa, K.S. (2014) Basin geomorphology and drainage morphometry parameters used as indicators for Groundwater prospect: Insight from Geographical Information System (GIS) technique, *Journal of Earth Science* Volume 25, Issue 6, pp 1018–1032 (Impact Factor: 2.2)
31. Deepika, B., **Avinash Kumar**, K.S. Jayappa (2014) Impact of estuarine processes and hydro-meteorological forcing on landform changes: a remote sensing, GIS and statistical approach, *Arabian Journal Geosciences*, Springer Publications Volume 8, Issue 2, pp 711–726 (Impact Factor: 1.2)
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33. **Avinash Kumar**, Jayappa, K.S. and Deepika, B. (2013) Evolution of spit morphology: a case study using a remote sensing and statistical based approach *Journal of Coastal Conservation*, Springer Publications Volume 17, Issue 3, pp 327–337 (Impact Factor: 1.7)

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35. Deepika, B., **Avinash Kumar** and Jayappa, K.S. (2013) Shoreline change rate estimation and its forecast: remote sensing, geographical information system and statistics-based approach, *International Journal of Environmental Science and Technology, Springer Publications* Volume 11, Issue 2, pp 395–416 (Impact Factor:2.03)
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39. **Avinash Kumar**, Jayappa, K.S. and Deepika, B. (2011) Prioritisation of Sub-basins Based on Geomorphology and Morphometric Analysis Using Remote Sensing and Geographic Information System (GIS) Techniques, *Geocarto International, Taylor and Francis Publications* Volume 26, pp. 569–592 (Impact Factor: 3.3)
40. **Avinash Kumar**, Narayana, A.C. and Jayappa, K.S. (2010) Shoreline Change Analysis and Spit Morphology of the Southern Karnataka Coast, India: A Remote Sensing and Statistics Based Approach, *Geomorphology, Elsevier Publications* Volume 120, p. 133–152 (Impact Factor: 3.9)
41. **Avinash Kumar**, K.S. Jayappa and Deepika B. (2010) Application of Remote Sensing and GIS in Change Detection of the Netravati and Gurpur River Channels, Karnataka, India, *Geocarto International, Taylor and Francis Publications* Volume 25, p. 397–425 (Impact Factor: 3.3)
42. **Avinash Kumar** and Jayappa, K.S.(2009) Long and Short-term Shoreline Changes along Mangalore Coast, India, *International Journal of Environmental Research* Volume 3, No. 2, p. 177–188 (Impact Factor: 2.6)
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44. **Avinash Kumar** (2008) Photographs showing unique coastal landforms under Coastal Photograph Section, *Journal of Coastal Research* 24(5):1217–1228 (Impact Factor:1)
45. **Avinash Kumar** (2008) Hyperspectral Remote Sensing, *Current Science* Volume 94, No.9, p.1115–1116 (Impact Factor:0.8)
46. **Avinash Kumar** (2007) Risk Assessment of Multi Hazards along Indian Coasts, *Current*

*Science* Volume 97, 897p, p.1115–1116 (Impact Factor:0.8)

47. Jayappa, K.S., **Avinash Kumar** and Vijaya Kumar, G.T. (2006) Littoral Sediment Transport and Textural Characteristics of Beach Sediments along Dakshina Kannada District, Karnataka, *Journal of Indian Association of Sedimentologists* Volume 25, pp. 29–35 (Impact Factor:0.8)

### Chapters in Books :

1. Swathi M., Juhi Yadav, **Avinash Kumar** and Mohan R (2022). Antarctic Sea ice Variability and Trends Over the Last Four Decades. Chapter 11 in a Book titled “Advances in Remote Sensing Technology and The Three Poles” (ISBN: 9781119787723) Published by Wiley <https://doi.org/10.1002/9781119787754.ch11>
2. **Avinash Kumar**, Juhi Yadav, Rohit Srivastava and Rahul Mohan (2021). Arctic sea ice variability and trends in the last four decades: role of ocean-atmospheric forcing Understanding Present and Past Arctic Environments ed N Khare (Amsterdam, Netherlands: Elsevier Inc.) pp 301-24 <https://doi.org/10.1016/B978-0-12-822869-2.00010-4>
3. **Avinash Kumar** and Jayappa K.S. (2009). Coastal Erosion in Dakshina Kannada and Udupi Districts, Karnataka - Implications on Effective Coastal Zone Management, a chapter in book titled Geohazards: Causes, Consequences and Containment, New India Publishers, New Delhi, p201-218.
4. Jayappa, K.S. Vijaya Kumar, G.T and **Avinash Kumar** (2009). Evolution of Coastal Landforms, Southern Karnataka: A Remote Sensing Approach. A chapter in book titled Coastal Environments - Problems and Perspective, IK International Publishing House Pvt. Ltd., New Delhi, p.79-95.

### Chapters in Proceeding Volumes :

1. **Avinash Kumar**, K. S. Jayappa, B. Deepika and A. C. Dinesh (2010). Hydrological-drainage analysis for evaluation of groundwater potential in a watershed basin of southern Karnataka, India: A remote sensing and GIS approach, 2010, Proc. the First International Applied Geological Congress (IAGC), April 26-28, 2010, Department of Geology, Islamic Azad University – Mashhad Branch, Mashhad, IRAN, Vol. 1. pp. 607-612.
2. K. S. Jayappa, **Avinash Kumar** and Deepika B (2010). “Evolution of Spits and Estuarine mouths, Southern Karnataka: A Remote Sensing Approach”, Proc. Nat. Conf. Coastal Processes, Resources and Management, 5-7 February 2010, CESS, Thiruvananthapuram, p. 275-279.
3. Jayappa, K.S., **Avinash Kumar** and Deepika, B. (2008) “Revolution of Technology in Earth Sciences Studies” In: Swadeshi Vijnana Andolana, Karnataka publication, pp.139-143. (In regional language of Kannada).
4. **Avinash Kumar** and Jayappa, K. S. (2007). “Applications of Remote Sensing and GIS for Coastal and Ocean Environmental Impact Assessment – A Few Case Studies”, Proc. Nat. Conf. Harbour and Ocean Engineering, 12-14 December 2007, NITK, Surathkal, p. 432-440.
5. Jayappa, K. S. and **Avinash Kumar** (2007). “Environmental Issues Pertaining to Coastal Zone Management of Southern Karnataka Coast”, Proc. Nat. Conf. Harbour and Ocean Engineering, 12-14 December 2007, NITK, Surathkal, p. 754-760.

## Membership of Prestigious Academies and Committee

1. **Member of AntClimnow (Near-term Variability and Prediction of the Antarctic Climate System)**, a SCAR flagship program that aims to study Antarctic climate variability through a regional and integrated approach (since August 23, 2024).
2. **Designated Inspectors under the Indian Antarctic Act 2022**, by the Central Government on 23 July 2024, to perform duties and exercise powers related to inspections in India as per the provisions of the Act.
3. **National Representative of SCAGI (SCAR's Geographic Information Committee)**, a committee that enhances the geographic framework for Antarctic research, operations, environmental management, and tourism (since June 25, 2024).
4. **Coordinator of Organising Committee for the 46th Antarctic Treaty Consultative Meeting (ATCM46) and 26th Committee on Environmental Protection (CEP26)**, hosted by MoES-NCPOR in Kochi, India (May 20-30, 2024).
5. **Member of National Committee for Scientific Committee on Antarctic Research (SCAR) (2024-2026)**.
6. **Life Member of Ocean Society of India** (since June 15, 2023).
7. **Local Organising Committee Member for the Scientific Committee on Antarctic Research (SCAR) 2022**, assisting in organizing the "Tenth SCAR Open Science Conference (SCAR-OSC 2022)" held as a virtual conference by MoES and NCPOR, Goa, India (August 01-10, 2022).
8. **Local Organising Committee Member** for the planning and organizing of the in-person XXXVII SCAR Delegates Meeting held at Goa, India (September 5-7, 2022).

## Reviewers of the Journals

- Arabian Journal of Geosciences (Springer)
- Environmental Earth Sciences (Springer)
- Environmental Research Communications (IOP Publishing)
- Environmental Research Letters (IOP Publishing)
- Geocarto International (Taylor & Francis)
- Geomorphology (Elsevier)
- Global and Planetary Change (Elsevier)
- ISPRS Journal of Photogrammetry and Remote Sensing (Elsevier)
- Journal of Atmospheric and Solar-Terrestrial Physics (Elsevier)
- Journal of Coastal Research (JSTOR)
- Journal of Environmental Management (Elsevier)
- Journal of Geophysical Research (AGU)
- Journal of Integrative Agriculture (Elsevier)
- Journal of the Indian Society of Remote Sensing (Springer)
- Natural Hazards (Springer)
- Nature Communications (Springer Nature)
- Scientific Reports – Nature (Springer Nature)
- Nature Communications Earth & Environment (Springer Nature)
- Regional Studies in Marine Science (Elsevier)

- Remote Sensing Applications: Society and Environment (Elsevier)
- Remote Sensing of Environment (Elsevier)
- Science of the Total Environment (Elsevier)
- The Egyptian Journal of Remote Sensing and Space Sciences (Elsevier)

## Scientific Reports

- As a Chairman and member of the Editorial Committee of “NCPOR Annual Reports from 2013 till date”, the reports were compiled, edited, and cover page and text setting layout designed for final printing. A total of 13 annual reports were compiled and edited.
- Associated with compiling the Scientific Report of 29th Indian Antarctic Expedition at present in press and proof reading.
- Worked during preparation of Bid Proposal for XXXVII SCAR Delegates Meeting and Open Science Conference SCAR 2022

## Delivered Invited Talks and Lectures

- Delivered a **Keynote Lecture** titled “Exploring the Extremes: Global Sea Ice in a Changing Climate” at the 41<sup>st</sup> Annual Convention of the Indian Association of Sedimentologists (IAS-2026) and the National Conference on Sedimentology held at the Department of Geology, Savitribai Phule Pune University, Pune, from 19–21 January 2026. The lecture focused on recent scientific insights into Arctic and Antarctic sea-ice variability, climate linkages, and their implications for global ocean–climate interactions. Also served as **Co-Chair for the session** “Pre, Syn and Post Deccan Sedimentation” along with Prof. G. M. Bhat.
- Moderated a **Panel Discussion** on “Pathways to Institutional Excellence Ecosystem” during the VISION SANSAD session at the India International Science Festival (IISF-2025) held on 8 December 2025. The session brought together eminent scientific leaders and institutional heads to discuss innovation-driven scientific ecosystems, governance reforms, and pathways towards globally competitive research institutions.
- Moderated the flagship **Reverse Panel Discussion** during the Science & Geopolitics of Arctic–Antarctic Leadership Conference (SaGAA VIII) held at the India International Centre, New Delhi, from 24–25 November 2025. The session facilitated dynamic discussions on Southern Ocean fisheries, permafrost impacts, Antarctic logistics, Arctic maritime governance, and the Polar–Space Frontiers Initiative, highlighting the importance of science-informed governance and international collaboration in polar research.
- Delivered an **Invited Lecture** titled “Exploring the Extremes: India’s Polar Science Chronicles” during the PIB Media Workshop “VARTALAP – Know the Ocean Around Us” organised by Press Information Bureau (PIB), Ministry of Information & Broadcasting, Government of India, held at Goa on 22 July 2025.
- Delivered an **Scientific Briefing Lecture** to trainee officers of the Long Hydrography Course from the National Institute of Hydrography, Goa, during their visit to the National Centre for Polar and Ocean Research (NCPOR) on 25 June 2025. The lecture focused on India’s Polar Programmes and the role of Arctic and Antarctic climate variability in influencing global climate and tropical teleconnections.

- Delivered an **Invited Talk** on “Arctic Impact on Asian Climate” during the Arctic Circle India Forum organised by the Ministry of Earth Sciences (MoES) and National Centre for Polar and Ocean Research (NCPOR) held from 3–4 May 2025. The presentation highlighted emerging scientific understanding of Arctic–Indian monsoon teleconnections and their importance in improving climate prediction, disaster preparedness, and regional climate resilience across Asia.
- Delivered an **Invited Talk** on “Contribution of ocean-atmospheric forcing to the unprecedented decline in Antarctic sea ice” at the International Workshop on India’s Polar Region Policy Towards Building Partnerships for Sustainable Development held at Gandhinagar, Gujarat, from 12–13 March 2024. The workshop was organised under the aegis of the Ministry of Earth Sciences (MoES), the National Centre for Polar and Ocean Research (NCPOR) and the UArctic network.
- Delivered a **Invited Talk** entitled "Recent Antarctic sea ice record low: Role of Ocean-Atmospheric forcing" in the two-day Science and Geopolitics of Himalaya-Arctic-Antarctic Conference (SaGHAA 7 2023) held at India International Centre, Max Mueller Marg, New Delhi, during April 27-28, 2023.
- Delivered an **Invited Keynote Talk** on “The Alarming Reality of Climate Change in the Polar Regions” in the National Seminar on “Life sciences and Bio-Technology for Eternal Development held on 24th of March, 2023 at S.D.S.M College of Arts and Science, Palghar, Maharashtra.
- Delivered an **Invited Talk** on “Applications of Remote Sensing and GIS in Geosciences” in the National-level Online Executive Development Program (EDP) 2022 held during 17-21 October, 2022, organised by the Department of Civil Engineering, Manipal University Jaipur, Rajasthan, in collaboration with Indian Concrete Institute (ICI).
- Delivered an **Invited Keynote Talk** on "Sea ice reaches a Record Low in the changing climate" in two days National Seminar on Coastal Dynamics: Sediments and Environs, Organised by the Department of Geology, G.S. Science College, Belagavi, in association with Geological Society of India, Regional Centre Belagavi held during June 9-10, 2022.
- Delivered an **Invited Talk** and interactions with the students on 27th April 2022 as a part of the Meet the Scientist program under SCI-FFI 2022 organised by the Vidyan Parishad, Goa.
- Delivered an **Invited Talk** entitled ‘Sea ice in the warming world’ to the students and general public at Goa University on 27th Feb 2022 as a part of a weeklong celebration of Vigyan Sarvatra Pujate organized by Goa University.
- Delivered an **Invited Talk** on “India’s Initiatives on Polar Research: Sea-ice in Changing Climate” and showed a Virtual Reality (VR) tour to Antarctica in Vigyan Sarvatra Pujyate aligned with Azadi ka Amrit Mahotsav, at Zoological Survey of India (ZSI), Andaman and Nicobar Regional Office, Port Blair on 24 February 2022.
- Delivered an **Invited Popular Science Lecture** entitled ‘Impact of Global Climate Change on Polar Regions’ during Science Film Festival of India (SciFFI) 2020 from 17 January, 2020 at ESG Complex, Panaji, Goa.
- Delivered an **Invited Talk** on titled. An Accelerated decline in the Arctic sea ice cover: A record minimum in Summer 2018" in the 5th Conference on “Science and Geopolitics of Himalaya, Arctic & Antarctic (SaGHAA 5) held from 26-27 February, 2019 in New Delhi, India.

- Delivered a **Lecture** on “Advancement of Polar Remote Sensing and Applications” for the M.Sc. students from Department of Physical Oceanography, Kerala University of Fisheries and Ocean Studies (KUFOS), and M.Sc. students from Department of Geo-informatics, BITS, Mesra Ranchi on 22.02.2019.
- Delivered a **Lecture** on “Application of remote sensing with special reference to Polar Regions” to about 75 students of M.Sc. / M.A. III semester including faculty members from the Department of Geography, Banaras Hindu University visited NCPOR on 10.01.2019.
- Delivered an **Invited Popular Science Lecture** entitled ‘Sea Ice interaction in Global Climate change’ during Science Film Festival of India (SciFFI) 2019 from 16-19 January, 2019 at ESG Complex, Panaji, Goa
- Delivered an **Invited Lecture** on "Global Warming and Climate Change: Achievement in Polar research in India” at Department of Geology, Patna Science College, Patna University, Patna on 17th July 2018.
- As a **Chief Guest and Resource Person Delivered Plenary Lecture** on "Geomorphology and Sea Ice Dynamics of Polar Regions using Remote sensing, GIS and field-based Observations” for the two-day national workshop on “Applications of Remote Sensing & GIS in Civil Engineering” during May 3-4, 2018 at AJ Institute of Engineering & Technology (AJIET), Mangalore, Karnataka.
- Delivered an **Invited Popular Science Lecture** on "Virtual tour to an Ice Continent: Understanding the Global warming and climate Change through Space" at the Goa Science Centre and Planetarium, Panjim sponsored by the Department of Science, Technology & Environment, Govt. of Goa on February 25, 2017.
- Delivered a **Lecture** on “Understanding the Earth Surface Processes through Space” during the celebration of First Decade Function and Foundation Day of Ministry of Earth Sciences on July 28, 2016 at NCAOR, Goa.
- Delivered an **Invited Talk** Dynamic Coastal processes and affecting mangrove shorelines of Sundarban and Pichavaram on 4th Meeting of the National Working Group (NWG) of IGCP project-588 on ‘Preparing for Coastal Change’ held on April 23, 2014 at GSI, Mangalore.
- Delivered an **Invited Lecture** on “Promoting Good Governance – Positive Contribution of Vigilance.” In the occasion of Vigilance Awareness Week, at NCAOR on 31st October, 2013.

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## Presentations at National & International Conferences/ Symposia/ Seminars

1. **Avinash Kumar**, Juhi Yadav and Rahul Mohan (2019) “Role of Ocean-Atmosphere Coupled Mechanism in unprecedented Decline of Arctic Sea-ice" during the International Symposium on 'Advances in Coastal Research with Special Reference to Indo Pacific-2019' (AdCoRe IP-2019) during December 17-19 2019 at National Centre for Coastal Research (NCCR), Chennai.
2. **Avinash Kumar**, Aakriti Srivastava, Juhi Yadav, Rahul Mohan (2019) “Recent morphodynamical changes and forecast of Amery ice shelf, Eastern Antarctica” in the in the 6th Biennial Conference OSICON-19 during 12-14th December 2019 at CMLRE, Kochi.

3. **Avinash Kumar**, Babula Jena, Rahul Mohan, M Ravichandran (2018). "Morphodynamical Changes and Predictions of Amery Ice Shelf, Eastern Antarctica" in the POLAR-2018 Open Science Conference at SCAR/IASC Open Science Conference was held from 19th-23rd June 2018 in Davos, Switzerland.
4. **Avinash Kumar** and Aakriti S. (2017). "Coastline change rate estimation and forecast of Amery ice shelf, Eastern Antarctica: A remote sensing and statistics-based approach". In PICES/ICES 3rd Early Career Scientist Conference (ECS3) on Climate, Oceans and Society: Challenges and Opportunities conference was held from 30 May – 2 June 2017 in Busan, South Korea.
5. **Avinash Kumar**, Waliur Rahaman and Alvarinho J. Luis (2017). Recent Antarctic sea ice variability and trends: Nonlinear response to the ocean climate forcings. In PICES/ICES 3rd Early Career Scientist Conference (ECS3) on Climate, Oceans and Society: Challenges and Opportunities conference was held from 30 May – 2 June 2017 in Busan, South Korea.
6. **Avinash Kumar** and A. J. Luis (2015). Antarctic sea ice variability and trends in the context to physical forcing" by for the session "New Frontiers in Remote Sensing in Antarctic Earth Sciences: Cross-disciplinary advances" in the XII International Symposium on Antarctic Earth Sciences (ISAES 2015) held at Goa during 13-17th July 2015.
7. Deepika B., **Avinash Kumar**, and Jayappa, K.S. (2011). Shoreline change rate estimation and prediction of future position of Udupi coast, Karnataka using GIS technique and statistical method. 24th Indian Institute of Geomorphologists and National Conference on Coastal Dynamics and Geomorphology, 19-22 October 2011, Department of Geology, Anna University, Chennai, p.34.
8. **Avinash Kumar**, Jayappa K. S., Deepika B. and Dinesh A. C. (2010) "Hydrological-drainage analysis for evaluation of groundwater potential in a watershed basin of southern Karnataka, India: A remote sensing and GIS approach" The First International Applied Geological Congress (IAGC), April 26-28, 2010, Department of Geology, Islamic Azad University – Mashhad Branch, Mashhad, IRAN, Volume 1 . pp. 607-612.
9. Jayappa K. S., **Avinash Kumar** and Deepika B. (2010). "Evolution of Spits and Estuarine mouths, Southern Karnataka: A Remote Sensing Approach", Nat. Conf. Coastal Processes, Resources and Management, 5-7 February 2010, CESS, Thiruvananthapuram, pp. 275-279.
10. **Avinash Kumar**, Jayappa K. S. and Deepika B. (2009) "Coastal Morphodynamics and Evolution of the Swarna Estuary, Southwest Coast of India: A Geomatics Approach" National Conference on Geospatial Technologies, Geomatrix '09, Abstract Volume , IIT, Bombay, Mumbai, pp. 50-51.
11. Jayappa, K. S. and **Avinash Kumar** (2009) "A Study on Coastal/Estuarine Morphodynamics and Flood prediction model of the Swarna Estuary, Southwest Coast of India, National Workshop on Present and Future Trends in Marine Geology and Geophysics, Abstract Volume , Ocean and Atmospheric Science and Technology Cell, Mangalore University, pp. 33-34
12. **Avinash Kumar** and Jayappa, K. S. (2008) "Applications of Space-Borne Data in Generation of Costal Zone Information – A Case Study from Southern Karnataka" in National Symposium on Advances in recent Remote Sensing Technology and Application

with Special Emphasis on Microwave Remote Sensing organized by Indian Society of Remote Sensing, Dehradun during December 18-20, 2008 at Ahmedabad. Abstract Volume pp 41-42.

13. Jayappa, K. S., **Avinash Kumar** and Deepika. B. (2008). Evolution and major issues of Kudrus in Netravati-Gurpur Estuaries, Karnataka, National Seminar on Konkan Coast DEED (Dynamics, Evolution, Ecosystem and Development), Abstract Volume, Department of Geology, G. S. Science college, Belgaum, 16p.
14. Jayappa, K. S., **Avinash Kumar** and Deepika B. (2008) "Revolution of Technology in Earth Sciences Studies" 4th Kannada VijnanaSammelana, Abstract Volume , Vishveshvaraya Technological University, Belgaum.
15. **Avinash Kumar** and Jayappa, K. S. (2008). Evolution of Dakshina Kannada coast, Karnataka, west coast of India – A case study using Remote Sensing and GIS techniques, National Seminar on Hyperspectral Remote Sensing and Spectral Signature Database Management System, Abstract Volume, Department of Earth Sciences, Annamalai University, pp 29-30
16. **Avinash Kumar** and Jayappa, K. S. (2007). Applications of Remote Sensing and GIS for coastal and ocean environmental impact assessment – A few case studies, Fourth National Conference on Harbour and Ocean Engineering, Abstract Volume, NITK, Surathkal, 126p.
17. Jayappa, K. S. and **Avinash Kumar** (2007). Environmental issues pertaining to coastal zone management of southern Karnataka coast, Fourth National Conference on Harbour and Ocean Engineering, Abstract Volume, NITK, Surathkal, 177p.
18. Jayappa, K. S., **Avinash Kumar** and Vinod Kumar (2007). Potential of Placer Deposits along Mangalore Coast, International Seminar on Crustal Evolution, Sedimentary Process and Metellogeny, Abstract Volume, SDM college of Engineering & Technology, Dharwad, pp. 94-95.
19. **Avinash Kumar** (2007). A case studies on Coastal Erosion along Mangalore Coast, International Workshop on Risk Assessment of Multi Hazards along Indian Coasts, Indian Institute of Remote Sensing (IIRS), Dehradun.
20. **Avinash Kumar** and Jayappa, K. S. (2007) Recession of Permeable and Impermeable Coastal Cliffs in Kerala, International Seminar onGeo-environment: Challenges Ahead, Abstract Volume , Postgraduate Department of Geology, University of Jammu, Jammu, 15p.
21. **Avinash Kumar** and Jayappa, K. S. (2007) Recent Developments in Remote Sensing and GIS Applications for Coastal Environmental Studies and Resource Assessment, National Seminar on Recent Developments and opportunities in exploration Geology and Geoinformatics, Abstract Volume , Department of Geology, Periyar University, Salem, 53p.
22. Jayappa, K. S. and **Avinash Kumar** (2006). Littoral Sediment Transport and Sedimentology of Beaches along Dakshina Kannada District, 23rd Annual Convention of IAS and National Seminar on Economic Significance of Sedimentary Basins of India, Abstract Volume, Anna University Chennai, pp. 139-140.
23. Seralathan, P and **Avinash Kumar** (2005). Morphology and erosion of cliffs at selected coastal areas of Kerala. International Conference on Coastal Hazards, Abstract Volume, SASTRA Deemed University, Thanjavur.

## **NCPOR International Cooperation and Outreach Work**

- As a Scientist-in-charge of the group coordinating all the outreach activities of different research programmes of NCPOR
- Coordinated in Science Fiesta 2019 from February 26–28, 2019 at Goa Science Centre and Planetarium, Panaji to set-up the NCPOR activities stall and inter-school Quiz Competitions.
- Coordinated the Antarctica Day 2018 celebration programme (Flash Presentation Competition for young researchers) on December 3, 2018 at NCPOR.
- Participated in the Young Scientist Conclave in IISF- 2018 and exhibited the NCPOR Scientific activities to the public at Lucknow from October 5 to 8, 2018.
- Organised ‘One day Seminar’ under the aegis of Indian International Science Festival (IISF) on September 7, 2018 at the Auditorium Hall, NCAOR as a part of an outreach programme under the aegis of IISF-2018. Highlights: a) Essay Competition for Schools and College students; b) Live interaction with scientists at Himadari, Svalbard; c) Interactive session with NCPOR scientists.
- Organized three days workshop on "The Art and Craft of Science Media Outreach" conducted by Mr. Peter Spinks, an acclaimed communicator and broadcaster from Australia from April 12-15, 2018.
- Associated with arrangement and coordination of preparatory level activity for 36th IGC 2020, A two days Regional Brainstorming Session (BSS) entitled "36th IGC: A Unique Opportunity for advancement in Geo-sciences" was conducted at NCPOR, Goa during August 17-18, 2017.

## **Training Programs Attended**

- Two-weeks special course on “Microwave Remote Sensing Applications” held during 17th to 30th September 2014 at NRSC Hyderabad, India.
- Five-days training-workshop on “Application of statistical tools in polar and ocean sciences” held during 8-12 December 2014 at NCAOR, GOA, India.
- On-site training on the “Ground Penetrating Radar (GPR) data acquisition and processing” arranged by Cryosphere group NCAOR and held during December 15-20, 2014, at Kullu/Manali, Uttarakhand, India.
- Two Weeks Special Course under RISAT-UP Programme of ISRO titled “Principles and Applications of Radar Remote Sensing with Emphasis on RISAT-1 Data Utilization” during September 02-13, 2013 at IIRS, Dehradun, India.
- Five-days Caris HIPS & SIPS Multi-beam data processing training programme at NCAOR (2011) and learned many techniques to evaluate and process the various bathymetric data acquired by different acquisition system.
- Thirteen-days NNRMS-ISRO sponsored National Training Programme on Hyperspectral Remote Sensing and Object-Oriented Image Analysis organized by Department of Earth Science, Annamalai University from 17-29 December, 2008.
- Two-weeks training programme on Coastal Oceanography: Remote Sensing & GIS Applications organized by Center for Studies on Bay of Bengal, Andhra University,

Visakhapatnam from 29th January – 10th February 2007.

- Ten-weeks course on Application of Remote Sensing and GIS for Mineral Exploration (GSI-ISRO collaborative programme under NNRMS) conducted by the Geological Survey of India Training Institute, Hyderabad from 18th January to 29th March 2006.

## **Participation in National & International Training/Workshop Program**

1. Three-days workshop on R-software for Statistical Computing held during June 29 to July 01 2010 at the Department of Post Graduate Studies and Research in Statistics, Mangalore University, Mangalagangothri.
2. Six-days National workshop on Proxies for Climate Change Studies organized by Department of Marine Sciences, Goa University, Goa during 8th- 13th March 2010.
3. One-day Regional Workshop on “Coastal Erosion, Siltation in Navigation Channels - Remedial Measures and Management” was organized by Department of Marine Geology, Mangalore University held on 26th March 2008.
4. One-day National Workshop on “Hyperspectral Remote Sensing Applications and Image Analysis” was organized by Department of Earth Sciences, Annamalai University held on 13th Feb 2008.
5. An International Workshop on “Risk Assessment of Multi Hazards along Indian Coasts” was organized at the Indian Institute of Remote Sensing (IIRS), Dehradun in collaboration with Asian Institute of Technology (AIT), Bangkok, Thailand and ITC, the Netherlands from 9-12 July 2007.
6. DST/NRDMS Sponsored Two-day Workshop on Soft Computing Techniques for Spatial Data Analysis conducted by Department of Computer and Information Science, University of Hyderabad in Nov 16-17, 2006.
7. A workshop on Natural Disaster Management - The Policy framework Organized by Kerala Sastra Sahitya Parishath and Cochin University of Science and Technology, February 26, 2005.

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