

# **CURRICULUM VITAE**

## **Prof. Amba Shetty**

Department of Applied Mechanics & Hydraulics,  
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### **Contact**

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### **Professional Education**

Ph.D. Water Resources and Remote Sensing  
Title: Spatial Hydrological and modelling using Remote Sensing and GIS in NITK, 2006  
M.Tech Hydraulics and Water Resources Engineering  
Title: Stress Analysis of a Gravity dam using finite element method in NITK, 1992  
B.Tech in Civil Engineering, NITK, 1990.

### **Research Interests**

Hydrological Modelling, Hyperspectral Remote sensing, GIS, Surface water hydrology,  
Microwave remote sensing application in soil moisture and flood studies.

### **Work Experience**

<b>From</b>	<b>To</b>	<b>Designation</b>
16.5.2018	Till date	Professor
10.3.2015	15.5.2018	Associate Professor
7.2.2009	10.3.015 – 9500 GP	Associate Professor
7.2.2006	7.2.2009 – 9000 GP	Assistant Professor
1 <sup>st</sup> March 2000	6/02/2006	Senior Lecturer
1 <sup>st</sup> March 1995	29 <sup>th</sup> Feb 2000	Lecturer
7 <sup>th</sup> May , 1992	28 <sup>th</sup> Feb 1995	Lecturer at Manipal University, Manipal

### Awards and Fellowship

- **Eighth Rank** to Mangalore University in BE.
- **Govt. of India Scholarship** for M.Tech Studies.
- **DAAD Fellowship** to attend Summer school in Germany: Summer school 2009 held at Kiel Germany during the period Sep 15, 2009 to Sep 30, 2009 on “Field Methods and eco-hydrological models for integrated water management in rural areas.
- **Best Paper Award** for the paper titled Utility of Hyperspectral Data for disease detection in Arecanut Palms in National Conference on furthering aspiration in Civil Engineering Techniques organised by Dept.of Civil Engineering Kannur, Kerala – Authored by Megha, Bhojraj, Amba Shetty and M.K Nagaraj
- **Best paper award** received by Mr. Vinay D C (co-authors: Dr. **Amba Shetty** and Mr. Gebermedhin Kiros) in an International Conference on Civil, Environment and Waste Management (CEWM-16) March 20-21, 2016 Mauritius
- Partial Grant to attend the International Conference Conference “Water Resources in Arid Area: The Way Forward”held in SQ University, Water Research Center Muscat, OMAN during the period Mar 13-16, 2016.
- **G.M.Nawate Award** “for the year 2017 for our paper titled: "Age Wise Arecanut Crop Water Requirement Model Using SMLR And Hyperspectral Data" and presented during HYDRO 2016 International Conference at CWPRS, Pune in Experimental Work category (By B. E. Bhojaraja, Amba Shetty, & M. K. Nagaraj)

### Professional Memberships:

- Life member of Indian Society of Technical Education (LM 2494)
- Life Member Indian Society of Hydraulics (LM/ 463)
- Life Member Indian Society of Photogrammetry and Remote Sensing (LM- 2683)
- Life Member Indian Society of Geomatics (IGS) (ISG-L-708)
- Life Member Institution of Engineers (IE) (M 128599-2)

### Research & Development Activities

1. Investigator in the project titled estimation of ground water recharge using RS and GIS tools sponsored by MHRD (Dr. Lakshman Nandagiri was the Principal Investigator, 2001-2003, 10L)
2. Co-investigator in the project titled “Integrating Remote Sensing data GIS and Hydrological Modelling for assessment of rural water supplies” sponsored by Indian Space Research Organization (ISRO) (Dr. Lakshman Nandagiri was the Principal Investigator, 2002-2005, 10L) No 10/04/363
3. Co-investigator in the project titled “Watershed characterization using parallely processed remote sensing data “sponsored by CDAC Pune (Dr. M.C.Narasimhan was the Principal Investigator, 2001- 2003, 2L)
4. Principal Investigator in the project titled “Modernisation of Remote Sensing and GIS lab” sponsored by MHRD (2004-2005, 21L) F.28-34/2003-TS.V (M-057).
5. A Cost effective Open Source Camera Tap for Wild life Conservation and Research Applications sponsored by TEQIP –II (Dr. Pruthviraj U., Dr. Amba Shetty and Prof. K.V.Gangadharan, 5.5L) NITK/TEQIP-II/1917/2016.

6. SMART IRRIGATION MANAGEMENT SYSTEM (SIMS) under Enhancement of R&D and Water Conservation Activities of TEQIP-II (Dr. Pruthviraj U., and Prof. K.V.Gangadharan, Amba Shetty 6.5L) NITK/TEQIP-II /1981/2016
7. Technical Report and Video Documentation on “Assessment of Historical Forest Land Cover and Land use change in Central Western Ghats of Kudremukh Landscape Complex using Aerial Imaging, Remote Sensing and GIS for the period 1980-2015 sponsored by Kudremukh Wildlife Division , Karkala Letter No. A3: CR: 15:2016-17
8. Filtering the Camera Trap Data Project sponsored by Kudremukh Wild Life, service provided under services to community (Pruthviraj U, K.V.Gangadharan, 67 000, 2016).
9. Climate Change Impact on water Resources of TAdri to Kanyakumari basins – IIT Bombay- NITK – CWRDM Kozhikode- Funded by Ministry of Water Resources, Govt. Of India. (A.Mahesha, Amba Shetty Varija and Ramesh H, 2017-2020, 59.26L).
10. Participatory local level assessment of life support systems: A methodology manual, Tech. Report No.78, Centre for Ecological Sciences, Indian Institute of Sciences, Bangalore, India. (Madhav Gadgil, Achar K.P., Amba Shetty, Lakshman NAndagiri et.al 2000, 1L).

### **Research Supervision:**

Sl. No.	Name of the Scholar	Title of the thesis	Doctoral Level	Year of Award	Other Guide
1	Tejaswini	Runoff Dynamics in Tank Catchments and Strategy for Tank Managements A case study from the Varada River Basin in Subtropical Region of South India	Ph.D.	2013	-----
2	Binny Gopal	Measurement and Prediction of top soil chemical properties using remote sensing	Ph.D.	2014	-----
3	G.Kiros Hailu	Assessment of Hydrological Impacts of Land Cover Changes and Climate Variability in the Geba Catchment , Ethiopia	Ph.D.	2016	Prof. Lakshman Nandagiri
4	Bhojaraja B.E	Hyperspectral Vegetation Indices for Arecanut Crop Monitoring	Ph.D.	2017	Prof .M.K.Nagaraj
5	Shahid	Identification and Apportionment of Pollution Sources to Groundwater quality using Receptor models	Ph.D.	2018	-----
6	Minu	An evaluation of Atmospheric Correction Algorithms in the prediction of Soil Organic Carbon from Hyperion image	Ph.D.	2018	----
7	Suparno Ghosh	Integrated Modelling of Agro-Industrial Landscape dynamics of India	Ph.D.	2018	----
8	Vinay D.C.	Influence of Oceanic parameters	Ph.D.	Ongoing	----

		on Coastal Rainfall			
9	Ashwin	Expert System for Mineral Classification using Hyperspectral Data	Ph.D.	Ongoing	Dr. Pruthviraj U
10	Vinod H	Digital Soil Mapping over Dharwad using Hyperspectral remote sensing	Ph.D.	Ongoing	Prof. S.Srihari
11	Deepa	Hyperspectral Data Classification using advanced Digital Image Classification techniques	Ph.D.	Ongoing	Dr. Narasim Dhan
12	Punithraj G	Surface Soil Moisture Retrieval over various land Covers	Ph.D.	Ongoing	Dr. Pruthviraj U

### M.Tech by Research

Sl. No.	Name of the Student	Title of the thesis	Year of Award	Other Guide
1	Chaya	Prediction of Soil Organic Carbon content using Hyperspectral Remote Sensing	2014	---
2	Chandan Kumar	Sub-pixel investigation of Hydrothermal Alteration Mineral Using ASTER and HYPERION data	2015	---
3	Ramesh	Expert System for Classification of Minerals using Hyperspectral Data	2016	Dr. Ramesh
4	Swathi Shetty	An exploratory Analysis of Rainfall and Influence of topographical Barriers on space time distribution of rainfall over Western Ghats of India	2018	Dr. Pruthviraj U

### M.Tech

Sl. No.	Name of the Student	Title of the Thesis	Year of Award	Other Guide
1	Srinivas G	Assessment of aquifer parameters and water quality around KREC Campus	2000	
2	Somnath Kori	Estimation of Unsaturated Hydraulic properties using artificial Neural networks	2001	
3	J. Vijayalatha	Performance evaluation of Pedo-transfer functions across soil textures	2002	
4	AVS Murali Mohan	Application of a physically based hydrologic model to a tropical river basin	2003	
5	Venkatakrisna J	Experimental studies on the mobile prisms for discharge measurements in open channels	2003	

6	Suresh	Geomorphological studies of Seetha Swarna estuary using Remote Sensing techniques	2004	
7	Venkata Reddy	Identification of ground water rechargeable areas using remote sensing GIS	2004	
8	Siva Kumar Y.V	Integrating Remote sensing data GIS and Hydrological modelling	2004	
9	S.B. Boregowda	Experimental Characterization of unsaturated hydraulic properties of lateritic soils of coastal Karnataka	2004	
10	Rajesh M.V.S	Distributed hydrological modelling using Remote Sensing and GIS	2004	
11	G. Ravikumar	Predictions of streamflow in ungauged basins – A systematic approach	2005	
12	Rajashekhar Reddy	Evaluation of pedotransfer functions – A comparative analysis	2006	
13	Padmini R	Groundwater Prospective Mapping – A GIS Based Index Model	2007	
14	Shivaraju	Finite Element Analysis of Breakwater	2008	
15	Pratibha	Change in Land Cover Composition over Mangalore City Corporation Area using RS data	2009	
16	Nayan Mulki	Real Estate Information System	2009	
17	Ravi Kishore	Peak Flow Estimation using GIS Techniques	2009	
18	Shahid	Geostatistical analysis of Water quality Parameters	2009	
19	Nagaraj G	Seismic Analysis of Rubble Mound Breakwater	2009	Prof. Babu Narayan
20	Bilu	Investigation on performance evaluation of Rainfall Interpolation Algorithms	2010	
21	Deepak	GIS enabled Decision making for Real estate Investment in Udupi City	2010	
22	Umesh	Performance Analysis of Conventional Classification Algorithms for Land use land cover mapping	2010	Prof. Lakshman Nandagiri
23	Chandrashekhar	Integrated Evaluation of Urban Development Suitability based on GIS technique	2010	
24	Sujay	Urban Sprawl Assessment of Mangalore City using RS and GIS	2010	
25	Vandan Pinto	Urban Sprawl studies of Mangalore City using Remote Sensing and GIS	2011	

26	Chethan	Assessment of Aerial growth of Arecanut Plantations in Dakshina Kannada using Geostatistics	2011	
27	Jayaprakash	Estimation of soil parameters using Geostatistical Techniques	2011	M.K.Nagaraj
28	Bhojraj	Characterization of soil physical properties using spectral reflectance	2011	
29	Swetha D	Spatial and temporal change studies of Western Ghats of Karnataka using Remote Sensing	2011	Prof. M.K.Nagaraj
30	Suraj	An Investigation on use of Digital camera as a tool to measure Organic matter of Coastal soil	2011	
31	Shilpa	Residential Real Estate Development using GIS Technique	2011	
32	Vinaya	Assessment of aerial growth of Rubber Plantations and its age in Dakshina Kannada using remote sensing	2012	
33	Abhiya	Prediction of Soil Organic Carbon from Visible Spectroscopy	2012	
34	Minu	Image Change Detection Algorithms using Matlab : A comparative study	2012	
35	Atul Balan	GIS enabled Construction Management	2012	
36	Megha	Disease detection of Arecanut crops using Hyperspectral Remote sensing	2013	
37	Manju	Arecanut crop Discrimination and Age prediction using Hyperspectral Remote sensing	2013	
38	Priyank	Python script for landslide susceptibility Mapping	2013	
39	Chenju Prince	Influence of Sea surface temperature on Mangalore Rainfall	2013	
40	Pratima	Rubber stock Volume prediction using remote Sensing data	2013	
41	Ramya	Modelling of top soil Nitrogen and Iron Oxide using hyperspectral data and ANN	2013	
42	Priyamitra	Classification of Satellite Images by Black Propagation Neural Network and K-means Algorithm	2014	
43	Alina	Comparison of Atmospheric Correction Algorithms on Eo-1 Hyperion Data for mineral studies	2014	
44	Harith	Land Use/Cover Change Modelling using Land Change Modeller	2014	

45	Varada	Spatio Temporal Analysis and Receptor Modelling of Groundwater Quality of Greater Bangalore using Multivariate Statistical Techniques & GIS	2014	
46	Anushree K Anju	Comparison of Receptor Models for Source Apportionment of Groundwater Pollutants in Bangalore City, Karnataka, India	2015	
47	A.V.Y. Yadhukrishnan	A GIS based 4D Modelling approach for Construction Project Management	2015	
48	Hredya Paul	Spectral Index for Identifying Arecanut Vegetation Disease	2015	
49	Anitha P	Satellite Image Classification using Fuzzy Logic	2015	
50	Chichu Khader	Road line Extraction using Fuzzy Logic	2015	
51	Prashanth	Evaluation of Spatial variation of Soil Chemical Properties Using Geostatistics	2016	Prof. M.K.Nagaraj
52	Elizabeth Baby George	Impact of SNR on Hyperspectral Pixel based Classifiers (V.Sri Naga Sai, 2016) 52. Atmospheric Correction of Hyperspectral Data for prediction of Soil Organic matter	2016	
53	S.Satya Deepika	Assessment of Performance of Hyperspectral Unmixing Algorithms for Land Cover Mapping	2016	
54	Vishwanatha Bhat	Modelling Agro-Industrial Land use/ Land cover Demand using Top Down Approach	2016	
55	Shishir Patil	GIS Based Modelling of Treated Water Resuse Distribution Network	2017	
56	Abhishek Srivatsva	Filling of Missing Data in ALOS world 3D – 30 m	2017	
57	Vinayak H	Synergy of Optical and SAR data for Biomass Estimation	2018	
58	Nishanth	Temporal Changes in Cropland and its Future Trends: A Case Study on Bahadurgarh Taluk	2018	
59	Venkateshwaralu	Multi-sensor Approach in Land cover Mapping	2018	

### **Consultancy Works**

1. Routine Testing of materials used in the construction industry in (Tension, Compression, Bending and Hardness).
2. Routine Pressure gauge calibration from the hospitals.

3. Routine Watermeter Calibration from the Industry.
4. Design of Surface Drainage system for Chitrapur area, Mangalore, Asha City Builders and Developers, 2007 (PI: Prof. Lakshman Nandagiri)
5. Institute Project: Design of Treated water Distribution System submitted report
6. Report on inspection of existing sand bars and the volume of sand available in Udupi District CRZ zone, rivers. (Ref: DMG / Udupi/ CRZ/2017-18/144 dated 15.04.2017 of 8 Lakhs, Co Consultant-K.Subramanya).
7. GIS survey of Kukke Hydro Project KHPPL/NITK/2808/2017/001 (Co Consultant-Dr. Pruthviraj U).
8. Report on inspection of existing sand bars and the volume of sand available in Mangalore District CRZ zone, rivers. (Ref: DMG / Mangalore/ CRZ/2018-19/268 date 24/5/2018 of 13.5 Lakh, Co-Consultant: Dr. Pruthviraj).
9. Preliminary Report on inspection Identification of Encroachment areas along the stream course in flood affected regions of Mangalore City  
(CAL/CR/209/C1 date 5/6/2018 2 Lakhs, Co-Consultant: Dr. Pruthviraj).

## **Publications:**

### **Journal Articles**

1. Vinay D.C and **Amba Shetty** (2018) “Trends in extreme rainfall over ecologically sensitive Western Ghats and coastal regions of Karnataka: An observational assessment” Arabian Journal of Geosciences, 2018
2. Tejaswini Nikhil Bhagwat, V. S. Hegde and **Amba Shetty** (2018) “Application of remote sensing and GIS for identification of potential ground water recharge sites in Semi-arid regions of Hard-rock terrain, in north Karnataka, South India” Sustainable Water Resources Management. <https://doi.org/10.1007/s40899-018-0244-6>
3. S. Minu, **Amba Shetty** & Cécile Gomez (2018) “Hybrid atmospheric correction algorithms and evaluation on VNIR/SWIR Hyperion satellite data for soil organic carbon prediction” International Journal of Remote Sensing DOI: 10.1080/01431161.2018.1483087
4. Shahid G and **Amba Shetty** (2018) “Groundwater quality assessment of urban Bengaluru using multivariate statistical techniques” Appl Water Sci (2018) 8: 43. <https://doi.org/10.1007/s13201-018-0684-z>
5. **S. Minu and Amba Shetty** (2018) “Prediction accuracy of soil organic carbon from ground based visible near-infrared reflectance spectroscopy” Journal of the Indian Society of Remote Sensing DOI: 10.1007/s12524-017-0744-0.



6. Chandrashekar, V.D. & **Shetty, A.** (2018) "Trends in extreme rainfall over ecologically sensitive Western Ghats and coastal regions of Karnataka: an observational assessment", Arab J Geosci (2018) 11: 327. <https://doi.org/10.1007/s12517-018-3700-6>
7. Bhat V., Prajwal M., **Shetty A.**, Srivastava A., Bhosale R. (2018) "Spatiotemporal Relationship Linking Land Use/Land Cover with Groundwater Level" In: Singh V., Yadav S., Yadava R. (eds) Groundwater. Water Science and Technology Library, vol 76. Springer, Singapore
8. S. Minu, **Amba Shetty**, Budiman Minasny & Cécile Gomez (2017) "The role of atmospheric correction algorithms in the prediction of soil organic carbon from Hyperion data", Vol. 38, Issue. 23 (I.F. 1.724).
9. Suparno Ghosh and **Amba Shetty** (2017) "Modelling the land use system process for a pre-industrial landscape in India" Model. Earth Syst. Environ. (2017) 3: 703. <https://doi.org/10.1007/s40808-017-0329-5>.
10. Doranalu Chandrashekar, V., **Shetty, A.**, Singh, B.B. et al.(2017) "Spatio-temporal precipitation variability over Western Ghats and Coastal region of Karnataka, envisaged using high resolution observed gridded data Model". Earth Syst. Environ. (2017) 3: 1611. <https://doi.org/10.1007/s40808-017-0395-8>.
11. Gebremedhin Kiros, **Amba Shetty**, Lakshman Nandagiri & Nir Krakauer (2017) Extreme rainfall signatures under changing climate in semi-arid northern highlands of Ethiopia, Cogent Geoscience, 3:1, DOI: 10.1080/23312041.2017.1353719
12. Ramesh N. Adep, **Amba Shetty** and Ramesh H. (2016) "EXhype: A tool for mineral classification using hyperspectral data." ISPRS Journal of Photogrammetry and Remote Sensing, Vol 124, 106–118 (I.F. 5.062 Elsevier Publications).
13. Ramesh N. Adep, Aswin P. Vijayan, **Amba Shetty** and Ramesh H (2016) "Performance evaluation of hyperspectral classification algorithms on AVIRIS mineral data." Perspectives in Science, Vol 8, 722-726 <https://doi.org/10.1016/j.pisc.2016.06.070>
14. Minu S, **Amba Shetty** and Binny Gopal (2016) "Review of Preprocessing Techniques used in Soil Property prediction from Hyperspectral data" Cogent Geoscience, 2, 1. DOI: 10.1080/23312041.2016.1145878
15. Minu S and **Amba Shetty** (2016) "Atmospheric Correction Algorithms for Hyperspectral Imageries: A Review" International Research Journal of Earth Sciences, Vol. 3(5), 14-18, ISSN 2321–2527.
16. Gulgundi, M.S. & Shetty, A. (2016) "Identification and apportionment of pollution sources to groundwater quality". Environ. Process. 3: 451. <https://doi.org/10.1007/s40710-016-0160-4>
17. Kiros, G., Shetty, A. & Nandagiri, L. (2016) "Analysis of variability and trends in rainfall over northern Ethiopia". Arab J Geosci 9: 451. <https://doi.org/10.1007/s12517-016-2471-1>
18. Bhojraj, **Amba Shetty**, Nagraj M.K., Manju (2015) "Age based classification of Arecanut crops: a case study of Channagiri, Karnataka, India" Geocarto International, vol. 31 No. 9 995-1005. (IF=1.37) DOI:10.1080/10106049.2015.1094528.
19. Minu, S., and **Amba Shetty**. (2015): "Atmospheric correction algorithms for hyperspectral imageries: A review." International Research Journal of Earth Sciences 3(5), 14-18.

20. Gebremedhin Kiros, Amba Shetty, Lakshman Nandagiri (2015) "Performance evaluation of SWAT model for land use and land cover changes in semi-arid climatic conditions: a review" *Hydrology: Current Research*, 6(3), 1.
21. Chandan Kumar, Amba Shetty, Simit Raval, Richa Upadhyay, P. K. Champatiray (2014) "Subpixel Mineral Mapping Using EO-1 Hyperion Hyperspectral Data (2014)" *The international Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Volume XCL-8, 2014. Doi:10.5194/isprsarchives XL-8-455-2014
22. Gopal, B., Shetty, A, Ramya, B. J. (2014). "Prediction of topsoil nitrogen from spaceborne hyperspectral data". *Geocato International*, vol. 30(1), 82-92. Doi:10.1080/10106049.2014.894585. (IF=1.37)
23. Gopal, B. and Shetty, A. (2013). "Evaluation of topsoil iron oxide from visible spectroscopy" *International Journal of research in engineering and Technology*, 2(12), 670-673. ISSN: 2321-7308
24. Anusha Gururaj and Amba Shetty (2012) "Land Cover Change Detection using Change Vector Analysis in Matlab" *IPCSIT vol.58 (2012) IACSIT Press, Singapore*. Doi:10.7763/IPCSIT.2012 V.58.7
25. Tejaswini N.B., Amba Shetty and Hegde V.S (2011) "Land use Scenario analysis and prediction of Runoff using SCS-CN Method: A case study from the Gudgudi Tank, Haveri District, Karnataka, India". *International Journal of Earth Sciences and Engineering*, ISSN 0974-5904, Vol. 04(5), pp. 845-853
26. Tejaswini, Amba Shetty, V.S.Hegde (2011) "Spatial variation in Drainage characteristics and geomorphic instantaneous unit hydrograph: Implications for watershed Management – A case study of Varada River basin, Northern Karnataka" *Elsevier Publications Catena* 87 (2011) 52-49. (IF = 2.482)
27. Lakshman Nandagiri, S. B. Bore Gowda & Amba Shetty M.ISH (2006) "In-Situ Characterization Of Unsaturated Soil Hydraulic Properties Of A Laterite Soil Profile In Coastal Karnataka", *ISH Journal of Hydraulic Engineering*, 12:1, 87-98, DOI: 10.1080/09715010.2006.10514819.

### **National Journals**

1. Binny Gopal, Amba Shetty, Jayaprakash and D.Y Chaya (2015)"Spatial variability of topsoil chemical properties" *"Indian Journal of Agricultural Research" Indian J. Agric. Res.*, 49 (2), 134-14
2. Chethan S, Amba Shetty (2011) "Satellite Imagery for Assessing Growth in Area of Arecanut Plantations in Dakshina Kannada" *Indian Journal of Arecanuts, Spices & Medicinal Plants Vol.13(3)*, 25-31.
3. Lakshman Nandagiri., Bore Gowda, S.B., and Amba Shetty. (2006). "In-situ characterization of unsaturated soil hydraulic properties of a laterite soil profile in coastal Karnataka". *ISH Journal of Hydraulic Engineering*. Vol.12 (1), 87-98. DOI: 10.1080/09715010.2006.10514819
4. Amba Shetty, Lakshman Nandagiri, Sangeetha & Rajesh, M.V.S. (2005). "Land use Land cover mapping using satellite data for a forested watershed Udupi district, Karnataka State

India". Journal of the Indian Society of Remote Sensing, Vol.33 (2) (ISSN: 0974-3006, IF = 0.628)

5. Amba Shetty and Subrahmanya K., "Effect of head of water and velocity of approach on coefficient of discharge of a "V" Notch—An Experimental Study", (1999), KREC Research Bulletin, Karnataka Regional Engineering College—Surathkal, Vol. 8 (2), 14 -17.

### International Conferences

1. Punithraj, G., Pruthviraj, U., Kukku Sara, P.E. and **Amba Shetty**. (2018). "Top surface soil moisture retrieval using C-band synthetic aperture radar over kudremukh grasslands." In, 23rd International Conference Hydraulics, Water Resources & Coastal Engineering (HYDRO), NIT, Patna. 19-21 Dec.
2. Vinod T, **Amba Shetty**, Srihari S (2018) "Geostatistical Analysis of Vertisols Micronutrient—A case study in Gulbarga taluk, Karnataka, India" International Conference on Construction, Real Estate, Infrastructure and Project Management (ICCRIP— 2018) at National Institute of Construction Management and Research (NICMAR), Pune, 23-25 Nov.
3. Pradeep Suryanarayana Barimar Rao, Swathi Shetty, Pruthviraj Umesh, **Amba Shetty**, (2018) "An Exploratory Analysis of Rainfall: a Case Study on Western Ghats of India", International Conference on Industrial Engineering and Operations Management (IEOM 2018) Washington DC, USA, 27-29 September.
4. Swathi Shetty, Pruthviraj U, **Amba Shetty**, (2018) "Comparison of TRMM and IMD Grid Precipitation with Ground Measured Data for Western Ghats of India", International Conference on Emerging Trends in Engineering (ICETE 2018), NMAMIT Nitte, 14-15 May.
5. Punithraj, G., Pruthviraj, U. and **Amba Shetty**. (2018). "Surface Soil Moisture Retrieval using C Band Synthetic Aperture Radar over Yanco Study Site, Australia- a Preliminary Study." In. International Conference on Geomatics in Civil Engineering, IIT, Roorkee, 5-6 Apr, 10.
6. Vinayak Huggannavar and **Amba Shetty**. (2018) "Synergy of optical and Synthetic Aperture Radar (SAR) to estimate forest biomass" In. International Conference on Geomatics in Civil Engineering, IIT, Roorkee, 5-6 Apr, 59.
7. Punithraj, G., Pruthviraj, U. and **Amba Shetty**. (2017). "Evaluation of Synergistic use of Sentinel-1 and Landsat Data for Land Use/Land Cover Classification." In. 22nd International Conference Hydraulics, Water Resources & Coastal Engineering (HYDRO), LDCE, Ahmedabad, 21-23 Dec, 132.
8. Vinay Doranalu C, **Amba Shetty**, Ercan Yeşilirmak (2016). "Spatio Temporal Distribution of Precipitation Concentration using High Resolution Gridded Data over the western Ghats and West Coast of Karnataka, India". 21st International Conference"on Hydraulics, Water Resources and River Engineering, Pune
9. Bhojaraja B. E., **Amba Shetty**, M. K. Nagaraj (2016). "Agewise Arecanut Crop Water Requirement Model Using SMLR and Hyperspectral Data", 21<sup>st</sup> International Conference on Hydraulics, Water Resources and River Engineering, Pune.
10. Ramesh N. A. Aswin P. Vijayan, **Amba Shetty** and Ramesh H. (2016). "Performance evaluation of hyperspectral classification algorithms using statistics" in the International

Conference on Recent Trends in Engineering and Material Sciences (ICEMS-2016) organized by Jaipur National University, Jaipur, India during March 17-19, 2016 held at Jaipur.

11. Vinay D C ,**Amba Shetty** and Mr. Gebermedhin Kiros (2016) “Trend Analysis of Rainfall using Gridded data over Coastal region of Karnataka , India in an International Conference on Civil, Environment and Waste Management (CEWM-16) March 20-21, 2016 Mauritius **was awarded the Best Session Paper award.**
12. Gebremedhin Kiros, **Amba Shetty**, Lakshman Nandagiri (2016). ”Analysis of Variability and trends in Rainfall over Northern Ethiopia , International Water Conference 2016 on Water Resource in Arid areas: The Way Forward, to be held at Sultan Qaboos University, Oman on March 13-16, 2016.
13. Gebremedhin Kiros, **Amba Shetty**, Lakshman Nandagiri (2015). “Trend Analysis of Temperature Time Series in Geba River Basin, Northern Ethiopia HYDRO 2015, IIT Roorkee
14. Bhojaraja B. E., **Amba Shetty**, M. K. Nagaraj (2015) Assessment of arecanut crop water requirement using hyperspectral data and PLSR model “HYDRO 2015, IIT Roorki.
15. Bhojaraja, B.E, Gaurav Hegde, Pruthviraj U, **Amba Shetty**, M.K. Nagaraj (2015) “Mapping Age wise Discrimination of Arecanut Crop Water Requirement Using Hyperspectral Remote Sensing” Aquatic Procedia Volume 4, 2015, Pages 1437–1444
16. Minu S. and **Amba Shetty** (2015) “A comparative study of change detection algorithms in MATLAB” Aquatic Procedia Volume 4, 2015, Pages 1366–1373
17. **Amba Shetty**, Abhiya Abbas Mundol and Minu S (2013) “ Effect of Spatial Resolution on Soil erosion Patterns –A GIS Approach” 3<sup>rd</sup> International Engineering Symposium IES 2013, March 4-6, 2013, Kumamoto University, Japan
18. Anusha Gururaj and **Amba Shetty** (2012) “Land Cover Change Detection using Change Vector analysis in Matlab” International Conference on Signal Processing Systems ICPS 2012) IPCSIT vol.58 (2012) held in Malasia.
19. **Amba Shetty** and Shahid (2009) “Geostatistical Analysis Of Groundwater Quality In Coastal Karnataka” Presented in Kiel Germany as part of the Summer school 2009 held at Germany Kiel during the period Sep 15 , 2009 to Sep 30 , 2009, on “Field methods and eco-hydrological models for integrated water management in rural areas “
20. **Amba Shetty**, Lakshman Nandagiri and Padmini R (2008) “Groundwater Prospective Mapping: Remote Sensing and a GIS Based Index Model Approach” “ Presented in the International SPIE Asia Pacific Remote Sensing conference held at Noumea , New Calidonia during the period 17<sup>th</sup> Nov. to 22<sup>nd</sup> Nov. 2008 DOI:10.1117/12.810012
21. Lakshman .Nandagiri, **Amba Shetty** & Somanth Kori. (2008) “Pedo Transfer Functions- An exploration using artificial neural networks”. International Groundwater Symposium 2002, 25-28 March 2002, Berkely, USA.
22. **Amba Shetty**, Lakshman Nandagiri, Padami Ramachandra, (2008) "Groundwater prospective mapping: remote sensing and a GIS-based index model approach," Proc. SPIE 7150, Remote Sensing of Inland, Coastal, and Oceanic Waters, 71500X

#### **National Conferences:**

1. S. Minu, Abhiya A.M and **Amba Shetty** (2016), “Comparison of Prediction Accuracy of Soil Organic Carbon from Reflectance Spectroscopy”, in Proceedings of National

Symposium on “Recent Advances in Remote Sensing and GIS with Special Emphasis on Mountain Ecosystems” December 7-9, 2016, ISRS Dehradun, page 432.

2. Vishwanath Bhat , Prajwal M and **Amba Shetty** (2016) “ Spatio-temporal Relationship linking land use land cover with Ground water level: 8th Annual KSTA Conference on Science and Technology for GenNext Urban Space 5<sup>th</sup> and 6<sup>th</sup> Nov, 15 held at BIT Bangalore
3. Alina Nero, Amba Shetty and Chandan Kumar (2015) “Comparison of Atmospheric Correction Algorithms on Hyperion Data for Mineral study” Proceedings 27<sup>th</sup> Session Kerala Science Congress held in ALAPPUZHA, 27<sup>th</sup>–30<sup>th</sup> January 2015
4. Bhojaraja B E,**Amba Shetty**,Nagaraj M K (2014). “An Integrated Approach for Arecanut Crop Health monitoring “ Proceedings of HYDRO 2014 International Conference on Hydraulics, Water resources & Environmental Engineering. (Dec. 18-20<sup>th</sup>, 2014) held at Bhopal.
5. Megha V, B.E Bhojaraja, **Amba Shetty**, M.K Nagaraj (2014) “Utility of Hyperspectral Data for Disease Detection in Arecanut Palms” National Conference on furthering Aspiration in Civil Engineering Techniques t organized by Dept. of Civil Engineering, Government College of engineering, Kannur, Kerala 26-27<sup>th</sup> June 2014. **It got the Best Paper Award.**
6. Varada V, Mohammad Shahid and **Amba Shetty (2014)**. “ Ground Water Quality Assessment using Multivariate Analysis “ Proceedings of the First Annual Conference on Innovations and developments in Civil Engineering held in NITK Surathkal 19-20 May, 2014.
7. Chaya D.Y. and **Amba Shetty** (2013). “Atmospheric Correction Modules on EO-1 Hyperion Data “National Conference on New Horizons in Civil Engineering, April 12-13, 2013 at MIT, Manipal
8. Ramya B.J., **Amba Shetty**, Nagaraj M.K., and Swetha D (2013). “ Spatial and Temporal Change studies of Western ghats region in Karnataka state using Remote Sensing Data” National Conference on New Horizons in Civil Engineering, April 12-13,2013 at MIT, Manipal
9. Priyamitra and **Amba Shetty** (2013) “Solar Radiation Mapping of Karnataka using Remote Sensing and GIS” National Conference on Emerging Trends in Environment and Energy Management (NCEEM- 2013) organized by Shri Madhwa Variraja Institute of Technology and Management, August 12- 13, 2013
10. Suparno Ghosh and **Amba Shetty** (2012). “A Conceptual Framework to Model Sustainable Land Management Using Remote Sensing and GIS” National Seminar on Managing Land Resources for Sustainable Agriculture held at NBSS & LUP Nagpur during 12<sup>th</sup> - 13<sup>th</sup> October 12.
11. Gumageri Nagaraj, Babu Narayan and **Amba Shetty** (2010). “Seismic Analysis of Rubble Mound Breakwater using FEM “International Conference on Earth Sciences and Engineering held at 21 st August 2010 at Hyderabad
12. **Amba Shetty** and Madhukara K Shetty (2008). “An overview of GIS applications in Mining Sector “National Seminar on “Synergy in Mineral sector for Sustainable Development Vision 2020. 4<sup>th</sup> to 6<sup>th</sup> October 08.
13. Lakshman Nandagiri & **Amba Shetty**. (2005). Predictions in Ungauged Basins: An Opportunity and Challenge for Bridging the Gap between Hydrologic Science and Practice in India. In IWMI-TATA Annual Partners’ Meet, Anand, 24-26<sup>th</sup> February 2005.

14. Bore Gowda S.B; Lakshman Nandagiri; and **Ambha Shetty** (2004). “Use of Time Domain Reflectometry to Characterize Unsaturated Soil Hydraulic Conductivity of a Sandy Lateritic Soil Profile on the West Coast of India”. ICON-HERP-2004, 26-28 Oct 2004, IIT Roorki.
15. Lakshman Nandagiri; **Amba Shetty**; and Rajesh, M.V.S. (2004). “A Hydrologic Model with Identifiable Parameters for Predictions in Ungauged Basins”. PUBSWRPM-2004 30<sup>th</sup> October 2004, BITS Pilani.
16. Lakshman Nandagiri & **Amba Shetty** (2003). “Estimation of Catchment scale Irrigation Water Requirements using Remote Sensing and GIS Techniques. Proc. of National Conference on ‘Integrated Sustainable Water Resources Planning and Management’, Birla Inst. of Tech. & Sci., Pilani, Oct. 11-12, 2003.
17. Lakshman Nandagiri & **Amba Shetty** (2003). “Stream flow Estimation from Rainfall – A Comparison of Statistical and Artificial Neural Network Approaches”. Proc. of International Conference on ‘Water and Environment’, Bhopal, 15-18 Dec. 2003
18. **Amba Shetty**, Venkat Reddy K and L. Nandagiri (2002). “Classification of potential ground water recharge zones using Remote sensing and GIS”, Proceedings of National Conference on Hydraulics, Water Resources & Ocean Engineering HYDRO 2002.
19. **Amba Shetty**, L.Nandagiri & Venkatakrishna J. (2001). “Experimental studies on the use of trapezoidal mobile prisms for discharge measurements in open channels”. Proceedings of Conference on Recent advances in Hydraulics & Water Resources Engineering, HYDRO2000, REC, Allahabad Feb.2001
20. **Amba Shetty**, L.Nandagiri & T Suresh Kumar (2000). “Evolution of geomorphology in the Seetha-Swarna estuary identified using remote sensing data”. Proceedings of Conference on Recent advances in Hydraulics & Water Resources Engineering, HYDRO2000, REC, Allahabad Feb.2001.
21. **Amba Shetty**, L.Nandagiri & Rahim Khan. An algorithm for designing a precipitation network- A case study. Proceedings of HYDRO 2001, 6-7 Dec. 2001, Pune.

### **Book Chapters:**

1. Lakshman Nandagiri & **Amba Shetty**, MVS Rajesh (2006). A Hydrological Model with identifiable parameters for predictions in ungauged basins. In predictions in ungauged basins for Sustainable Water Resources Planning and Management Raju K.S (Ed.) Jain Brothers 53-61.
2. L. Nandagiri & **Amba Shetty** (2004) Estimation of Catchment Scale Irrigation Water Requirements using Remote Sensing and GIS Techniques. In Integrated Water Resources Planning and Management Raju K.S etal (EDs) Jain Brothers 137-144.
3. L. Nandagiri & **Amba Shetty** (2003) Streamflow Estimation from Rainfall – A comparison of Statistical and Artificial Neural Networks. In Advances in Hydrology Singh V.P and R.N YAdava (Eds.) Allied Publishers, Pvt. Ltd 253-257.
4. **Amba Shetty** and Subrahmanya K., “Effect of head of water and velocity of approach on coefficient of discharge of a “V” Notch–An Experimental Study”, (1999), KREC Research Bulletin, Karnataka Regional Engineering College–Surathkal, Vol. 8 (2), pp14–17.

### **Events Organized/ Coordinated:**

1. Coordinated an expert talk by Dr. Pierre Gooverts Biomed Inc, USA on “Thoughts of An associate Editor on Preparation of Scientific Manuscripts” on 20<sup>th</sup> Dec, 2016

2. Coordinated an expert talk by Jyoti Prakash IIT B on Research Methodology in Oct, 21<sup>st</sup> 2016
3. GIAN programme on Geostatistical Analysis of Environmental Data from Dec, 5 to 09, 2016 by Dr. Pierre Gooverts, Chief Scientist, Biomed Inc., Michichen, USA
4. Coordinated Two day TEQIP workshop on Microwave remote sensing sensing by Prof. Y.S.Rao IIT Mumbai 17<sup>th</sup> and 18<sup>th</sup> October, 2016
5. Coordinated 5 days Continuing education programme titled “Advanced Surveying, Total Station, Gis, Gps & Mapping” began on 25<sup>th</sup> July, 16 to 29<sup>th</sup> July, 2016, Sponsored by Engineering Staff College, Krishnarajasagara.
6. One day Awareness program “Indian Remote Sensing Societal Applications “on 30/06/2016 sponsored by Indian Space Research Organization
7. Two days’ workshop on “Geoinformatics for Natural Resources Management” sponsored by Karnataka Science and Technology Academy was organized during January 30-31<sup>st</sup> 2013 for the benefit of Science teachers sponsored by Karnataka Science and Technology Academy
8. Organized visit of Prof. George Hormann and his teams from Kiel University Germany to NITK Surathkal and arranged number of lectures in the area of water resources quantity and Quality modelling 2011 sponsored Institute Expert Lecture Series Fund
9. Organized visit of Prof. Goovearts, University of Florida - visit to NITK and other Institutes nearby. Arranged number of lectures and interaction with the students in the area of Environmental Geostatistics sponsored Institute Expert Lecture Series Fund, 2009
10. Coordinator for the refresher course on “Computer Aided Analysis Design and detailing of Structures” held during the period 25<sup>th</sup> August to 29<sup>th</sup> August 08. Sponsored by KERS Mysore
11. Awareness program on Remote Sensing Applications for students and high school teachers (2008) sponsored by RRSSC, Bangalore
12. One Day Workshop on STADD PRO for students of Civil Engineering Association, sponsored by CEA, NITK , 2007
13. Short term Program (5 Days) on Principles of GIS for the engineers of Irrigation Dept. and Public Works, 2007.

**Training Received:**

<b>Year</b>	<b>Nature of Training</b>	<b>Duration</b>	<b>Organization where training was provided</b>
2016	Microwave Remote Sensing	2	NITK
2016	Geostatistical Analysis of Environmental Data	5	NITK

<b>Year</b>	<b>Nature of Training</b>	<b>Duration</b>	<b>Organization where training was provided</b>
2016	Hyperspectral Remote Sensing	5	NRSA
2016	Impacts of Climate Change, Urbanization and Land Use Land Cover Change on Water Resources May 30 –June 3, 2016	5	IIT Bombay
2016	GIS for Civil Engineers May 23-27, 2016	5	IIT Bombay
2011	Digital Image Processing and Analysis for Remote Sensing QIP programme held at IIT Bombay during July 18-22, 2011	5	IIT Bombay
2011	Fuzzy logic, Genetic Algorithm with Wavelet transformation in Civil Engineering shortterm training programme held during 27 <sup>th</sup> June to 1 <sup>st</sup> July, 2011 at NITK Surathkal	5	NITK
2010	Geographic Information System and Applications QIP short term course on Geographic Information System and Applications conducted by IIT Bombay during July 05-09, 2010	5	IIT Bombay
2010	Geostatistical analysis of Environmental Data training course jointly organized by University of Florida and International Crops Research Institute for the Semi-Arid tropics during the period 5-9 April 2010, ICRISAT, India	5	ICRISAT, India
2010	Dale Carnegie MISSION 10 X training Programme on “ High Impact Teaching Skills” on the 17 <sup>th</sup> and 18 <sup>th</sup> May 2010	2	NITK
2010	Summer School of Effective Teaching Methodologies- Statics Organised by Dept. of		NITK



<b>Year</b>	<b>Nature of Training</b>	<b>Duration</b>	<b>Organization where training was provided</b>
	Applied Mechanics and Hydraulics 10-14 <sup>th</sup> May 2010		

### **Workshops Attended:**

<b>Year</b>	<b>Conferences / Seminars /Workshops attended</b>	<b>Organization</b>
2016	Research Interaction at IIT B ( May 19 – June 3, 16)	Dept. of CSRE, IITB
2015	Sustainable Operations Management Concepts and Models ( June 04- June 06, 15)	Dept, OF Management IIT Delhi
2015	Data Science ( Feb, 27 <sup>th</sup> and 28 <sup>th</sup> , 15)	Computer Science Engg. NITK Surathkal
2015	National Conference on “Outcome Bases Education “16 and 17 <sup>th</sup> Jan, 2015	School of Management, NITK Surathkal
2015	Recent Trends in System Application as applied to Civil Engineering 9 <sup>th</sup> Jan, 2015	Applied Mechanics, NITK Surathkal
2015	Soil and Water Networking National Workshop ( Jan 4 <sup>th</sup> to 7 <sup>th</sup> , 15)	IIT Kharagpur and University of Sydney Australia
2013	One day Workshop on Workplace Sensitization 22nd Nov, 2013	NITK
2013	ASI- SBN Conference 2013 ISRO Satellite Centre , April 17-18, 2013	ISRO, Bangalore
2013	Water Proofing and Water Harvesting	IE, Kodagu , Dakshina Kannada and Udupi Engineers Association
2013	Disaster Management of Floods and Consequences thereof in Coastal Region and Food and Water Security	NITK and IE , Mangalore
2012	GNSS USER MEET -2012 at ISRO Satellite Centre, Bangalore on February 23, 2012.	ISRO, Bangalore
2012	Conservation of Water Resources of West Flowing Rivers in Coastal Karnataka 14-15 Dec. 2012	NITK
2010	International Conference on Earth Sciences and Engineering, ICEE 2010	CAFET, INNOVA Technical Society

### **Visits Abroad**

<b>Sl. No.</b>	<b>Organization</b>	<b>Nature of work</b>	<b>Period</b>
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1	Sultan Qaboos University, Oman	International Conference	March 13-16, 2016
2	Asian Institute of Technology , Bangkok	Research Interaction with Remote sensing, GIS, Water resources specialists in Dept. of Resources Engg.	11 <sup>th</sup> Jan, 16 to 15 <sup>th</sup> Jan, 16
3	Kumamoto University Japan	3 <sup>rd</sup> International Engineering Symposium IES 2013, March 4-6, 2013, Kumamoto University, Japan Symposium	3 Days (2013)
4	Kiel, Germany	Training on Field methods and eco-hydrological models for integrated water management in rural areas Hands on training on open source softwares , Simulation project including report and presentation	2 weeks (Sept, 2009)
5	New Caledonia , IRD cell	Discussion on Remote sensing , GIS and watershed management	2 days (Nov, 2008)
6	The University of Western Australia, Perth	Interaction with Remote sensing , GIS , Water resources specialists in the Dept.	5 days (Non-Dec) 2008
7	Nanyong Technological University, Singapore	Interaction with Remote sensing , GIS , Water resources specialists in the Nanyong, University of Singapore and Centre for Remote Sensing and Processing	1 month, May- June 2008