

Pre-Symposium Tutorial on UAV Remote Sensing

December 6, 2016

Abstract

With the fast growing need for highly accurate and detailed observation data required in many applications such as environmental, agricultural and natural resources monitoring, Unmanned Aerial Vehicles (UAV's) has emerged as an efficient supplement to remote sensing data. Low altitude UAVs has seen significant growth in recent years, as they offer flexibility and rapidity of use, low per-flight costs and the ability to collect 'hyper-spatial' data. Availability in wide range of sizes, with light weight systems, typical flying at altitudes ranging from 100 m – 500 m and the areal extent ranging typically from few m² to few km² they have a great potential for different applications like fire and disaster management, natural resource management, 3D terrain mapping, precision agriculture, wildlife observation, vegetation measurements, etc. The huge amount of data, provided by UAVs, represents a new challenge regarding developments of processing, storage and transmission techniques.

In recognition of the potential of this emerging technology On the occasion of the National Symposium on "Recent Advances in Remote Sensing and GIS Recent Advances in Remote Sensing and GIS with Special Emphasis on Mountain Ecosystems" during December 7-9, 2016 at Dehradun, One Day Pre Symposium Tutorial on ***UAV Remote Sensing and its Applications*** is organized in order to create awareness, share knowledge and experience and enable the participants to explore the potential of this technology for their research applications.

Outlines of the Tutorial

Coordinator: Mrs Shefali Agrawal
Speakers/ Resource Persons Mrs Shefali Agrawal Dr. R. N. Sahoo NESAC Mr. S. Raghavendra
UAV Remote Sensing and its Application <ul style="list-style-type: none">• Introduction to UAV Remote Sensing (introduction about UAVs and various RS Applications)• UAV Flight Mission Planning and Data Acquisition• UAV Data processing and photogrammetric Applications• UAV RS for Agriculture Applications• Demonstration on UAV data acquisition• Hands on UAV data processing and output generation (mosaicing, stretching, generating ortho products, point clouds, DSM, DEM etc.)

Organizers and Speakers



Ms. Shefali Agrawal

Head of Photogrammetry Department. She is a physicist working with the Indian Institute of Remote Sensing since last 23 years. She pursues her academic interest in addressing both fundamental and applied aspects of remote sensing, with emphasis on satellite photogrammetry, advanced image processing and modeling related to land use /land cover characterization and vegetation physics dynamics. Her current research focus is on terrain information extraction using satellite, Lidar and UAV data sets.



Mr. P.L.N Raju

Presently Director of North Eastern Space Application Center (NESAC). Earlier he has served at Indian Institute of Remote Sensing (IIRS) for more than 27 years. He has contributed in the field of Remote Sensing Applications, Geographical Information System, Global Navigation Satellite System, Water Resources, 3D GIS and Visualization. He has vast experience in Training, education, Capacity Building & Distance Learning Outreach Programs (Live / Interactive & Internet based (e-learning) under the EDUSAT programme.



Dr. Rabi N Sahoo

Principal Scientist with Indian Agricultural Research Institute (IARI), Indian Council of Agricultural Research, New Delhi has 16 years of experience in research, teaching and capacity building in the field of Remote Sensing and GIS. Ph.D. (Agricultural Physics) from IARI. He has been involved in many national & international research programs for Remote Sensing applications. His current research interests include hyperspectral remote sensing, BRDF and radiative transfer modeling for quantitative assessment of soil and crop for precision agriculture and high throughput plant phenomics.



Mr. Victor Sikon

He holds a Master of Technology (M.Tech) degree in Remote Sensing and GIS from Jawaharlal Nehru Technological University, Hyderabad. Currently working as scientist SD in NESAC in the field Remote Sensing, Image Analysis, Digital Photogrammetry, Global Positioning System and UAV data processing.



Mr. S. Raghavendra

Scientist at the Indian Institute of Remote Sensing, ISRO, Dehradun His area of interest in research focuses on Lidar data analysis, Photogrammetry and UAV remote sensing. He holds a Master's degree in Technology from IIT, Kanpur.



Mr. Chirag Gupta

Working as scientist SC in NESAC in the field of UAV designing and assembly, flight planning, data acquisition, processing and its application (Crop Damage Assessment, City planning, Disaster management etc.). He is also working in the field of Tele education, Tele Medicine, VRC and Ka band experiment project.