International Conference on Remote Sensing, GIS and Climate Change (RSGCC–2023)

Applications, Strategies, Solutions & Education

13 – 15 March 2023

Remote Sensing, GIS and Climatic Research Lab (RSGCRL)
National Center of GIS and Space Applications (NCGSA)
Centre for Remote Sensing & Institute of Education and Research (IER)
University of the Punjab, Lahore, Pakistan.

Brief Program

Day 1 March 13, 2023, Monday

	Waheed Shaheed Hall	Conference Hall	Classroom-1	Classroom-2	Poster Hall	Exhibition Hall
09:00-11:00	Inauguration & Plenary Session (*Faisal Auditorium*)				Poster Presentations	Geospatial S&T Exhibition
11:00-11:30	**Break & Discussion**	**Break**				
11:30-13:10	Technical Session–I	Technical Session–I (*Parallel*)			Poster Presentations	Geospatial S&T Exhibition
13:10-14:00	**Lunch & Prayer Break**					
14:00-16:00	Technical Session–II	Technical Session–II (*Parallel*)	Workshop–1	Workshop–2 (*Parallel*)	Poster Presentations	Geospatial S&T Exhibition
16:00-17:30			Workshop–3 (*Online*)			

Day 2 March 14, 2023, Tuesday

	Waheed Shaheed Hall	Conference Hall	Classroom-1	Classroom-2	Poster Hall	Exhibition Hall
08:30-09:30	Plenary Session & Launching of ARGC Society	Technical Session–III (*Parallel*)		Panel Discussion on Educating Climate Change	Poster Presentations	Geospatial S&T Exhibition
09:30-10:50	Technical Session–III		Technical Session–III A (*Parallel*)		Poster Presentations	Geospatial S&T Exhibition
10:50-11:10	**Break**					
11:10-13:10	Technical Session–IV	Technical Session–IV (*Parallel*)	Workshop–4		Poster Presentations	Geospatial S&T Exhibition
13:10-14:00	**Lunch & Prayer Break**					
14:00-16:00	Technical Session–V	Technical Session–V (*Parallel*)		Workshop–5	Poster Presentations	Geospatial S&T Exhibition

Day 3 March 15, 2023, Wednesday

	Waheed Shaheed Hall	Conference Hall	Classroom-1	Classroom-2	Poster Hall	Exhibition Hall
08:30-09:30	Plenary Session	Technical Session–VI (*Parallel*)	Technical Session–VI A (*Parallel*)	**Special Session** on Professional Networking & Linkages of Geospatial Industry & Academia	Poster Presentations	Geospatial S&T Exhibition
09:30-10:50	Technical Session–VI				Poster Presentations	Geospatial S&T Exhibition
10:50-11:00	**Break**					
11:00-13:10	Technical Session–VII	Technical Session–VII (*Parallel*)	Workshop–6	Workshop–7 (*Parallel*)	Poster Presentations	Geospatial S&T Exhibition
13:10-14:00	**Lunch & Prayer Break**					
14:00-16:00	Closing Ceremony (*Faisal Auditorium*)					

Venue: Faisal Auditorium / Waheed Shaheed Hall, Institute of Education and Research (IER), Quaid-i-Azam Campus (New Campus), University of the Punjab, Lahore.

Day-1 March 13, 2023, Monday

Inauguration & Plenary Session	
Time	**Program**
09:00	Distinguished guests and participants to be seated
09:10	Arrival of Chief Guest and Delegates
09:15	Recitation of Holy Quran and National Anthem
09:20	Welcome address by Prof Dr Niaz Ahmad Akhtar (SI), Vice Chancellor, University of the Punjab, Lahore
09:30	Address by Conference President
09:40	Address by Chief Guest
09:50	Brief about RSGCRL and Conference by Dr Zia ul Haq, Chief Organizer/PI/Director RSGCRL, Centre for Remote Sensing, PU
10:00	Keynote Addresses
10:30	Shields presentation to Honorable Guests Group Photograph + Vote of Thanks
11:00–11:30	Refreshment & Discussion (Chief Guest, VC, Keynote Speakers and RSGCRL Team)

Venue: Faisal Auditorium, Quaid-i-Azam Campus (New Campus), University of the Punjab, Lahore.

Conference Detailed Program

Day-1 March 13, 2023, Monday

Technical Session– I (Waheed Shaheed Hall)		
Theme	(a) Climate/Climate Change, Meteorology, and the Atmosphere (b) Educating on Climate Change and Sustainable Development (c) Public Health	
Time	**Chair: Prof Dr Muhammad Ali (Ex. Chairman, Space Science, PU)**	**Co–Chair: Dr Muhammad Iqbal (SUPARCO)**
11:30–11:50	**Topic:** Assessment of the effect of Land-Use on weather in an arid region using remote sensing **Presenter**: Dr Derk Bakker (Lahore)	
11:50–12:10	**Topic:** Seasonal Variability of Particulate Black Carbon and Impact of planetary boundary layer in Haze Smog Formation over Lahore Pakistan **Presenter:** Dr Maria Razi on behalf of Dr Imran Shahid (Qatar University, Doha Qatar)	
12:10–12:30	**Topic:** Simulation of hyperspectral infrared and microwave radiances for retrieval of atmospheric profiles in clear-sky and cloudy conditions **Presenter**: Shoaib Shafique (SUPARCO), Lahore	
12:30–12:50	**Topic:** Greenhouse gas emissions and aerosol distribution in the brick kiln zones: An appraisal using spatial information technology **Presenter**: Shazia Pervaiz (Environmental Protection Agency, Lahore)	
12:50–13:10	**Topic:** Leveraging of data-driven models and remote sensing for transboundary reservoir operation **Presenter**: Dr Akif Rahim (Punjab Irrigation Department, Lahore)	
13:10–14:00	Prayer + Lunch Break & **Visit to Exhibition Hall**	

Day-1 March 13, 2023, Monday

Technical Session– I-P (Conference Hall)		
Theme	a) Climate/Climate Change, Meteorology, and the Atmosphere b) Educating on Climate Change and Sustainable Development c) Agriculture and Food Security d) Public Health	
Time	**Chair: Dr Derk Bakker (FCCU, Lahore)**	**Co–Chair: Dr Khadija Shakrullah (FCCU, Lahore)**
11:30–11:50	**Topic:** Rainwater Harvesting System as a Strategy for Urban Storm Management, A Case Study of Lahore **Presenter**: Tanzeela Shahbaz (University of Engineering and Technology, Lahore)	
11:50–12:10	**Topic:** Nature-based solutions to ensure food security in the eastern foothills of the Kirthar mountain range **Presenter**: Umar Javaid (University of the Punjab, Lahore)	
12:10–12:30	**Topic:** Geospatial analysis of variation in temperature and trend analysis of Punjab **Presenter**: Fizza Nadeem (Kinnaird College for Women, University Punjab, Lahore)	
12:30–12:50	**Topic:** Indices-Based Mapping of Terrestrial Vegetative Landcover of KPK **Presenter**: Fiza Hafeez (Remote Sensing, GIS and Climatic Research Lab, Lahore)	
12:50–13:10	**Topic:** Geospatial assessment of smog patterns and its relevant economic valuation in Punjab **Presenter**: Fatima Imran (Kinnaird College for Women, University Punjab, Lahore)	
13:10–14:00	**Prayer + Lunch Break &** **Visit to Exhibition Hall**	

Note:

i) Presentation Time (15 minutes), Q&A (5 minutes), Change–over time for multimedia (5 minutes)

ii) Certificates will be provided via email after the Conference.

iii) ARGC Society Membership at the Information Desk during 09:00– 16:00 hrs.

Day-1 March 13, 2023, Monday

Technical Session– II (Waheed Shaheed Hall)		
Theme	a) Climate/Climate Change, Meteorology, and the Atmosphere b) Educating on Climate Change and Sustainable Development c) Agriculture and Food Security d) Geohazards and Disasters	
Time	**Chair: Prof Dr Sohail Chand (College of Statistical Science, PU)**	**Co–Chair: Dr M. Farooq (SUPARCO)**
14:00– 14:20	**Topic:** Investigation of indoor air pollution caused by paints used for interior painting in a building in Istanbul. **Invited Speaker**: Dr Yilmaz YILDRIM (Zonguldak Bülent Ecevit University, Türkiye)	
14:20–14:40	**Topic:** Flood analysis through remote sensing for Lokoja, Nigeria **Presenter:** Letwin Pondo (Midlands State University, Zimbabwe)	
14:40–15:00	**Topic:** Sea level variations and geomorphological changes in Makran coastal belt and Indus deltaic region **Presenter**: Muhammad Adnan (Institute of Space Technology, Islamabad)	
15:00–15:20	**Topic:** Climate Change and open educational resources **Presenter:** Muhammad Hassan (Kean University, NJ, USA)	
15:20–15:40	**Topic:** The European INSPIRE Directive: Its Approach and Lessons to Learn **Invited Speaker:** Prof Dr Franz-Josef Behr (Stuttgart University of Applied Sciences, Germany)	
15:40–16:00	**Topic:** Potential sites selection for rainwater harvesting in Kotli, AJK **Presenter**: Muhammad Qasim (Army Land Management Cell (ALMC), Rawalpindi)	

Day-1 March 13, 2023, Monday

Technical Session– II-P (Conference Hall)		
Theme	(a) Climate/Climate Change, Meteorology, and the Atmosphere (b) Educating on Climate Change and Sustainable Development	
Time	**Chair: Prof Dr Safdar Ali Shirazi (Institute of Geography, PU)**	**Co–Chair: Dr Syed M. Irteza (Urban Unit, Lahore)**
14:00– 14:20	**Topic:** Intervention of criteria air pollutants in urban air: a multi-sectoral guide to combat environmental smog **Presenter**: Filza Zafar Khan (Pakistan Council of Scientific and Industrial Research, Lahore)	
14:20–14:40	**Topic:** Investigating the relationship of soil moisture content, precipitation and aerosols with enhanced vegetation index in Pakistan **Presenter**: Dr Khadija Shakrullah (Forman Christian College (A Chartered University), Lahore)	
14:40–15:00	**Topic:** Urban damage detection using sentinel-1 data in Turkey and Syria earthquakes **Presenter**: Muhammad Zeeshan Ghani (Institute of Space and Technology, Islamabad)	
15:00–15:20	**Topic:** Variations in the aerosol index and its relationship with meteorological parameters over Pakistan using remote sensing **Presenter**: Muhammad Khan (University of the Punjab, Lahore)	
15:20–15:40	**Topic:** Exploring the relationship between greenhouse gases, economic growth, and energy use in South Asia **Presenter**: Ali Imran (University of the Punjab, Lahore)	
15:40–16:00	**Topic:** Linear and wavelet analysis of carbon monoxide (CO) over Pakistan during 2019-2022 using remote sensing **Presenter**: Hafsa Shahzad (University of the Punjab, Lahore)	

Note:

i) Presentation Time (15 minutes), Q&A (5 minutes), Change–over time for multimedia (5 minutes)

ii) Certificates will be provided via email after the Conference.

iii) ARGC Society Membership at the Information Desk during 09:00– 16:00 hrs.

Day–2 March 14 2023, Tuesday

Technical Session– III (Waheed Shaheed Hall)		
Themes	Water Resources and Water Cycle	
Time	**Chair: Prof Dr Rehan A. Khan Sherwani (College of Statistical Sciences, PU)**	**Co–Chair: Dr Khalid Mahmood (Space Science, PU)**
Plenary Session 08:30– 09:30	**Invited Speaker: Dr Rashid Mahmood** (Climate Variability and Change, Barcelona Supercomputing Center, Barcelona) **Topic:** Constraining variability in large ensembles of climate model simulations to provide skillful predictions and attribute predictability on multi-decadal timescales **Invited Speaker:** Mr. Navseed Iqbal, Project Director (NMDC) (Ministry of Energy– Petroleum Division) **Topic:** Integrated GIS-Based minerals information & services portal **Launching of ARGC Society** (Dr Asim Daud Rana - President)	
09:30– 09:50	**Topic:** Pakistan Integrated Context Analysis (ICA) on food insecurity and natural hazards **Presenter**: Sana Zahid Shah (World Food Program, Islamabad)	
09:50– 10:10	**Topic:** SAR Data applications for archeological exploration in the Hisara Dherai (Bala Hisar) Charsadda district **Presenter**: Hisham Azeem (Institute of Space Technology, Islamabad)	
10:10–10:30	**Topic:** Uncertainties in Hydro-Climatic Modeling under Changing Climate **Presenter**: Muhammad Shahid Iqbal (International Water Management Institute (IWMI), Lahore)	
10:30–10:50	**Topic:** A comparative assessment of suspended sediment concentration in Indus delta region using Landsat 8 and Sentinel 2 **Invited Speaker**: Maryam Khan (National Institute of Oceanography, Karachi)	
10:50–11:10	**Refreshments**	

Day–2 March 14 2023, Tuesday

Technical Session– III-P		
Themes	a) Water Resources and Water Cycle b) Change and Adaptation in Deltaic and High Mountain System c) Geohazards and Disasters	
Time	**Chair: Prof Dr Syed Amer Mahmood (Chairman, Space Science, PU)**	**Co–Chair: Dr Muhammad Athar Javaid (Space Science, PU)**
08:30– 08:50	**Topic:** Crop modeling using remote sensing techniques **Presenter**: Muhammad Safdar (University of Agriculture, Faisalabad)	
08:50– 09:10	**Topic:** Projections of Temperature, Evaporation, and Precipitation in Pakistan under a changing climate: implications for water resources management and food security **Presenter**: Shafqat Ali (University of the Punjab, Lahore)	
09:10– 09:30	**Topic:** A spatio-temporal analysis of trends in snow cover in the Chitral basin **Presenter**: Muhammad Adeel (University of the Punjab, Lahore)	
09:30– 09:50	**Topic:** Seasonal and time-averaged analysis of Total Column Ozone (TCO) over Pakistan from 1989 to 2022 using remote sensing **Presenter**: Atifa Nadeem (University of the Punjab, Lahore)	
09:50– 10:10	**Topic:** A Spatiotemporal Analysis of Land use and Land cover in Punjab, Pakistan. **Presenter**: Aiman Riaz (Kinnaird College for Women University, Lahore)	
10:10–10:30	**Topic:** Flood inundation mapping and risk zonation of Kunhar River Basin, Pakistan using HEC-GeoRAS model **Presenter**: Syed Umair Shahid (University of the Punjab, Lahore)	
10:30–10:50	**Topic:** A study of optical and physical properties of dust aerosols over Pakistan using remote sensing **Presenter**: Rimsha Arshad (University of the Punjab, Lahore)	
10:50–11:10	**Refreshments**	

i) Presentation Time (15 minutes), Q&A (5 minutes), Change–over time for multimedia (5 minutes)

ii) Certificates will be provided via email after the Conference.

iii) ARGC Society Membership at the Information Desk during 09:00– 16:00 hrs.

Day–2 March 14 2023, Tuesday

Technical Session– III (A) (Classroom 1)		
Themes	a) Climate/Climate Change, Meteorology, and the Atmosphere b) Geological studies, mineral resources and applications	
Time	**Chair: Dr Muhammad Yaseen (Space Science, PU)**	**Co–Chair: Dr Salma Anwar (Space Science, PU)**
08:30– 08:50	**Topic:** Distribution of particulate matter in smog prone city: an analysis using Sentinel-5p data **Presenter:** Kanwal Javid (Government College University, Lahore)	
08:50– 09:10	**Topic:** Effects of drought on agriculture production in Pakistan **Presenter**: Muhammad Safdar (University of Agriculture, Faisalabad)	
09:10– 09:30	**Topic:** Transboundary geospatial analysis of PM2.5 over Pakistani and Indian Punjab **Presenter**: Farwa Abdul Qadir (Kinnaird College for Women, University Punjab, Lahore)	
09:30– 09:50	**Topic:** Multi-Satellites Imagery Catalogue (A semantic web approach) **Presenter**: Muhammad Umair (Institute of Space Technology, Islamabad)	
09:50– 10:10	**Topic:** Disaster Risk Assessment of Pakistan– An overview of NatCat Model Project **Presenter**: Dr Muhammad Farooq (Space Application Center for Response in Emergency and Disasters, SUPARCO, Islamabad)	
10:10–10:30	**Topic:** Synthetic aperture radar (SAR) remote sensing applications in agriculture **Presenter**: Muhammad Safdar (University of Agriculture, Faisalabad)	
10:30–10:50	**Topic:** Assessing Potential of Lidar Data for 3D Modelling **Presenter**: Muhammad Sanan (University of the Punjab, Lahore)	
10:50–11:10	**Refreshments**	

Day–2 March 14 2023, Tuesday

Panel Discussion on Educating Climate Change (Classroom 2)		
Time	**Chair: Prof Dr Abdul Qayyum (Director, IER, PU)**	**Co–Chair: Dr Ahmed Sher Awan (IER, PU)**
09:00– 11:00	**Panelist:** • Dr Nighat Sana Kirmani • Dr Asim Nazir • Dr Tayyaba Muhammad Akram • Dr Aroona Shah Hashmi • Dr Mubashira Khatoon	• Dr Syeda Adila Batool • Dr Muhammad Islam • Mrs Afshan Mumtaz • Dr Akram • *List to be updated*

Day–2 March 14 2023, Tuesday

Technical Session– IV (Waheed Shaheed Hall)		
Themes	Water Resources and Water Cycle	
Time	**Chair: Prof Dr Abdul Qadir (CEES, PU)**	**Co–Chair: Dr Hammad Gilani (IWMI, Lahore)**
11:10–11:30	**Topic:** Spatio-temporal analysis of mass balance of Hunza basin glaciers in relation with climatic variability **Presenter**: Shahid Iqbal (University of the Punjab, Lahore)	
11:30–11:50	**Topic:** Characterizing the variations in groundwater storage at local scale using downscaled grace/grace-fo data based on a machine learning **Presenter:** Shoaib Ali (Northeast Agricultural University Harbin, China)	
11:50–12:10	**Topic:** Groundwater potential zones in Gwadar using remote sensing techniques **Presenter**: Syed Waqar Hussain Shah (Institute of Space and Technology, Islamabad)	
12:10–12:30	**Topic:** Leveraging AI and Remote Sensing for Improved Water Resources Management **Presenter**: Muhammad Tasawar (University of Agriculture, Faisalabad)	
12:30–12:50	**Topic:** Impact of Ghazi Barotha hydropower project on Landuse/ Land cover along Indus River **Presenter**: Ehsan Inam Ullah (National University of Science and Technology, Islamabad)	

12:50– 13:10	**Topic:** Technology Commercialization Models - Global Perspective **Presenter:** Dr Nazakat Ali (FIEP)
13:10–14:00	**Namaz + Lunch Break**

Day–2 March 14 2023, Tuesday

Technical Session– IV-P (Conference Hall)

Theme	(a) Climate/Climate Change, Meteorology, and the Atmosphere (b) Water Resources and Water Cycle (c) Change and Adaptation in Deltaic and High Mountain System	
Time	**Chair: Dr Muhammad Sanaullah (Institute of Geology, PU)**	**Co–Chair: Dr Rashid Mahmood (Climate Variability and Change, Barcelona Supercomputing Center, Barcelona)**
11:10–11:30	**Topic:** Analysing snow-cover characteristics of Siachen Glacier using RS&GIS techniques **Presenter**: Nadia Jabeen (Institute of Space Technology, Islamabad)	
11:30–11:50	**Topic:** Stochastic comparison of traditional water indexes for spatial monitoring of groundwater **Presenter**: Saba Arif (University of the Punjab, Lahore)	
11:50–12:10	**Topic:** Spatio-temporal assessment of RS based groundwater storage variation for Pakistan **Presenter**: Zoha Mahmood (University of the Punjab, Lahore)	
12:10–12:30	**Topic:** Satellite based thermal profiling of growing cities in relation to land transformation **Presenter**: Syeda Yuman Fatima (University of the Punjab, Lahore)	
12:30–12:50	**Topic:** Evaluation of Black carbon column mass density in Pakistan based on MERRA-2 model **Presenter**: Horeb Qamar (University of the Punjab, Lahore)	
12:50–13:10	**Topic:** Role of land use/land cover as determinant of local thermal print using Google Earth Engine **Presenter:** Sundas Liaqat (National University of Sciences and Technology, Islamabad)	
13:10–14:00	**Namaz + Lunch Break**	

Day–2 March 14 2023, Tuesday

Technical Session– V (Waheed Shaheed Hall)

Theme	(a) Water Resources and Water Cycle (b) Marine and Coastal Environment Resources and Dynamics (c) Climate/Climate Change, Meteorology, and the Atmosphere	
Time	**Chair: Dr Shazia Pervaiz (EPA, Lahore)**	**Co–Chair: Dr Asma Majeed (Islamia University of Bahawalpur)**
14:00–14:20	**Topic:** Environmental pollutions and remote sensing studies at Zonguldak region **Invited Speaker**: Dr Yilmaz YILDRIM (Zonguldak Bülent Ecevit University, Türkiye)	
14:20– 14:40	**Topic:** Innovations in surface water monitoring using satellite images, drones, and online toolkits **Invited Speaker**: Sara Sheshangosht (Water Research Institute, Ministry of Energy, Tehran, Iran)	
14:40–15:00	**Topic:** Detection of algal blooms using Landsat-8 OLI imagery **Invited Speaker:** Dr Majid Nazir (Polytechnic University, Hong Kong)	
15:00–15:20	**Topic:** Time averaged and seasonal analysis of NDVI over Pakistan during 2005 to 2022 using RS **Presenter**: Haleema Azeem (University of the Punjab, Lahore)	
15:20–15:40	**Topic:** Spatio-chemical assessment of groundwater contamination by landfill leachate using inverted watershed analysis **Presenter**: Fatima Tahir (University of Lahore, Lahore)	
15:40–16:00	**Topic:** Remote Sensing Techniques using ASTER Data for Lithological Identification and Mineral Exploration of Waziristan Ophiolites, Northwest Pakistan **Presenter**: Aneeza Munir (Lahore)	

Day–2 March 14 2023, Tuesday

Technical Session– V-P (Conference Hall)

Theme	(a) Climate/Climate Change, Meteorology, and the Atmosphere (b) Water Resources and Water Cycle (c) Marine and Coastal Environment Resources and Dynamics

Time	Chair: Dr Maliha Uroos (Institute of Chemistry, PU)	Co–Chair: Dr Salman Tariq (Centre for Remote Sensing, PU)
14:00–14:20	**Topic:** Remote sensing of absorbing and scattering aerosols over Pakistan **Presenter**: Hasan Nawaz (Wollongong, Australia)	
14:20– 14:40	**Topic:** Seasonal and weekly NO_2 levels and rigorous validation of satellite NO_2 values with various ground-based instruments in Islamabad, Pakistan **Presenter**: Rabia Majeed (National University of Science and Technology, Islamabad)	
14:40–15:00	**Topic:** PLDR based aerosol classification over Lahore city using inversion products from version 3 of AERONET **Presenter**: Muhammad Nabeel Khan (University of Lahore, Lahore)	
15:00–15:20	**Topic:** A study on aerosols distribution over Karachi using AERONET **Presenter**: Muhammad Zeeshan (University of Okara, Okara)	
15:20–15:40	**Topic:** Integrating Remote Sensing and Socio-Economic Data sets for a Comprehensive Analysis of Air Pollution Risk in South Asia. **Presenter**: Muhammad Umar Aslam (University of the Punjab, Lahore)	
15:40–16:00	**Topic:** NO_2 over Pakistan during 2018 to 2023 using TROPOMI **Presenter**: Muhammad Raees Ahmad (University of the Punjab, Lahore)	
17:30–21:30	**Field trip + Night gala (By invitations only)**	

Day– 3 March 15 2023, Wednesday

Technical Session– VI (Waheed Shaheed Hall)		
Themes	a) Public Health b) Capacity building, networking, resource sharing c) Geological studies, Mineral resources and applications	
Time	**Chair: Prof Dr Zulfiqar Ali (Institute of Zoology, PU)**	**Co–Chair: Prof Dr Shakeel Ahmed (Institute of Botany, PU)**
Plenary Session 08:30– 09:30	**Invited Speaker: Prof Dr Fahim Khokhar** (NUST, Islamabad) **Topic:** Role and Challenges of Low-Cost Sensors in Air Pollution Monitoring **Invited Speaker: Dr Muhammad Iqbal** (SUPARCO, Islamabad) **Topic:** Geospatial agriculture monitoring for sustainable food security in Pakistan **Invited Speaker: Dr Waqas A. Qazi** (Offshore Monitoring Limited) **Topic:** Earth Remote Sensing with Synthetic Aperture Radar (SAR)	
09:30– 09:50	**Topic:** Location Matters: A spatial turn in applied health research **Invited Speaker:** Dr Rizwan Shahid (University of Calgary, Calgary, Canada)	
09:50– 10:10	**Topic:** Development of Public Transit Routes using Geospatial Technologies-A case study of twin cities **Invited Speaker:** Dr Tayyab Ikram Shah (University of Saskatchewan, Saskatoon, Canada)	
10:10–10:30	**Topic:** Geospatial mapping of Solar Photovoltaic Potential at building footprints in Northern tourism districts across Pakistan **Presenter**: Abdul Sattar Sheikh (Institute of Space Technology, Islamabad)	
10:30–10:50	**Topic:** Geospatial assessment of forest cover status under changing climate in Khyber Pakhtunkhwa during 2007-2018 **Presenter**: Dr Ibrar ul Hassan Akhtar (SUPARCO, Islamabad)	
10:50–11:10	**Refreshments**	

Day– 3 March 15 2023, Wednesday

Technical Session– VI-P (Waheed Shaheed Hall)		
Themes	a) Climate/Climate Change, Meteorology, and the Atmosphere b) Urbanization, Sustainable/Smart Societies, and Industrialization c) Public Health d) Geological studies, mineral resources and applications	
Time	**Chair: Dr Arshad Javid (UVAS, Lahore)**	**Co–Chair: Dr Sawaid Abbas (GIS Centre, PU)**

08:30– 08:50	**Topic:** GIS based severity index analysis of road traffic crashes **Presenter**: Muhammad Mukarram Munir (Engineering Consultancy Services Punjab-ECSP, Lahore)
08:50– 09:10	**Topic:** The spatial and temporal variations in dust mass surface concentration of pm2.5 in Pakistan using remote sensing **Presenter**: Abdullah Bin Zafar (University of the Punjab, Lahore)
09:10– 09:30	**Topic:** Spatiotemporal variations in total surface mass concentration of PM2.5 in Pakistan using RS **Presenter**: Nabiha Khan (University of the Punjab, Lahore)
09:30– 09:50	**Topic:** Flood susceptibility assessment using frequency ratio model: a case study of district Ghotki and Kashmore **Presenter:** Awais Muneer (Islamia University of Bahawalpur, Bahawalpur)
09:50– 10:10	**Topic:** DNA Based Biodiversity Inventories: A Way forward for Pakistan **Presenter**: Dr Nazeer Ahmed (Balochistan University of IT, Engineering & Management Sciences, Quetta)
10:10–10:30	**Topic:** Monitoring surface water level changes of the Old Wives Lake using RS techniques. **Presenter**: Abdul Raouf (Saskatchewan Polytechnic, Regina, Saskatchewan)
10:30–10:50	**Topic:** Investigation of variability in hydrological droughts over upper Indus river basin **Presenter**: Muhammad Shehzad Ashraf (University of Engineering & Technology, Lahore)
10:50–11:10	**Refreshments**

Day– 3 March 15 2023, Wednesday

Technical Session– VI(A) (Classroom 1)

Themes	a) Water Resource and Water Cycle b) Data and Information Systems and Spatial Data Infrastructures	
Time	**Chair: Dr Sami Ullah (Kohsar University, Murree)**	**Co–Chair: Mr Munawar Iqbal (College of Statistical Sciences, PU)**
09:10– 09:30	**Topic:** Geospatial budgeting for drinking water supply in Lahore residential region: cost effective alternatives **Presenter**: Aneeqa Arshad (University of the Punjab, Lahore)	
09:30– 09:50	**Topic:** Evaluating the changing Ramsar wetlands in Pakistan through geospatial techniques. **Presenter**: Syed Ali Asad Naqvi (Government College University Faisalabad, Faisalabad)	
09:50– 10:10	**Topic:** Bayesian approach ABC– MCMC for ARDL model using economic variables of Pakistan **Presenter**: Munawar Iqbal (University of the Punjab, Lahore)	
10:10–10:30	**Topic:** Land Use and Climate Change impact on groundwater resources of Lahore **Presenter**: Muhammad Zain ul Abideen (UET, Lahore)	
10:30–10:50	**Topic:** Application of remote sensing to identify climate and land use change impacts on surface runoff in the Haro river basin **Presenter**: Muhammad Shaheer (UET, Lahore)	
10:50–11:10	**Refreshment**	

Day– 3 March 15 2023, Wednesday

Special Session on
Professional Networking & Linkages of Geospatial Industry & Academia (Classroom 2)

Time	**Chair: Dr Najam Abbas (Chairman NCGSA, IST, Islamabad)**	**Co–Chair: Dr Zia ul Haq (Director, RSGCRL, Centre for Remote Sensing, PU)**
09:00– 10:50	**Panelist:** • Dr M Iqbal (SUPARCO) • Dr Hammad Gilani (IWMI) • Dr Fahim Khokhar (NUST) • Dr Sami ullah (Kohsar Uni) • Dr Urooj Saeed (Urban Unit) • Mr Tahir Butt (NESPAK) • Mr Murad Kasana (The Spatio) • Mr Naveed Iqbal (I3A)	• Mrs Sara Sheshangosht • Dr Akif Rahim (Irrigation Dept) • Dr Syeda Adila Batool (RSGCRL) • Dr Shahid Parvez • Dr Asim Daud Rana • Dr Khalid Mahmood • Dr Salman Tariq • *List to be updated*
10:50– 11:10	**Refreshment**	

Day– 3 March 15 2023, Wednesday

Technical Session– VII (Waheed Shaheed Hall)		
Theme	(a) Climate/Climate Change, Meteorology, and the Atmosphere (b) Agricultural and food security (c) Forest, Biodiversity, and Ecosystems (d) Marine and Coastal Environment Resources and Dynamics	
Time	**Chair: Dr Najam Abbas (Chairman NCGSA, IST, Islamabad)**	**Co–Chair: Dr Muhammad Shafique (University of Peshawar)**
11:10–11:30	**Topic:** Harnessing the Power of Remote Sensing and Machine Learning for Agricultural Resources Management in Pakistan **Presenter**: Muhammad Danish Majeed (University of Agriculture, Faisalabad)	
11:30–11:50	**Topic:** The Effects of Climate on Human Fertility and Food Security in Punjab **Presenter**: Rumana Siddiqui (University of the Punjab, Lahore)	
11:50–12:10	**Topic:** Cluster analysis with satellite and sociodemographic data to classify the Salvadoran territory **Presenter:** Metzi Aguilar (University Universidad Centroamericana José Simeón Cañas, El Salvador)	
12:10–12:30	**Topic:** Climate Change and Open Educational Resources– Building Capacity **Invited Speaker**: Muhammad Hassan (Kean University, NJ, USA)	
12:30–12:50	**Topic:** Impact of deforestation on climate change: The case study of Murree hills **Presenter**: Liaqat Ali Waseem (Faisalabad)	
12:50–13:10	**Topic:** Qualitative and quantitative analysis of ground water for irrigation purposes by using gis techniques in Okara, Sahiwal and Khanewal districts, Lahore **Presenter**: Usfa Asif (CEES, Lahore)	
13:10–14:00	**Namaz + Lunch Break**	

Day– 3 March 15 2023, Wednesday

Technical Session– VII-P		
Themes	a) Urbanization, Sustainable/Smart Societies, and Industrialization b) Data and Information Systems and Spatial Data Infrastructures c) Capacity Building, networking, Resource Sharing d) Geohazards and Disasters	
Time	**Chair: Dr Urooj Saeed (Urban Unit, Lahore)**	**Co–Chair: Mrs Sara Sheshangosht (Water Research Institute, Iran)**
11:10–11:30	**Topic:** The significance of landslide mapping and forecasting in mitigating natural disasters – a New Zealand perspective **Invited Speaker**: Dr Salman Ashraf	
11:30–11:50	**Topic:** Active fire monitoring in Chile using google earth engine: an analysis of MODIS, GOES, and Firms datasets **Presenter**: Mirza Muhammad Muzamil (National Center In Big Data & Cloud Computing (NCBC), NED UET, Karachi)	
11:50–12:10	**Topic:** Modelling the Effect of Meteorological Parameters on Tropospheric Concentrations in Pakistan **Presenter**: Muhammad Abid (Quaid-i-Azam University, Islamabad)	
12:10–12:30	**Topic:** Evaluation of solid waste disposal strategy from a climate change perspective using modelling approach **Presenter**: Dr Asma Majeed (The Islamia University of Bahawalpur, Bahawalpur)	
12:30–12:50	**Topic:** Using satellite remote sensing to uncover the spatiotemporal variations in methane emissions in Lahore Pakistan **Presenter**: Ayesha Mariam (RSGCRL, University of the Punjab, Lahore)	
12:50–13:10	**Topic:** Validation and assessment of precipitation from Tropical Rainfall Measuring Mission and ground-based data over Pakistan **Presenter**: Ayesha Azhar (RSGCRL, University of the Punjab, Lahore)	
13:10–14:00	**Namaz + Lunch Break**	

i) Presentation Time (15 minutes), Q&A (5 minutes), Change–over time for multimedia (5 minutes)

ii) Certificates will be provided via email after the Conference.

iii) ARGC Society Membership at the Information Desk during 09:00– 16:00 hrs.

Day– 3 March 15 2023, Wednesday

Closing Ceremony	
Time	**Program**
14:00–14:05	All participants and distinguished guests to be seated
14:05–14:15	Arrival of the Chief Guest and Delegates
14:15–14:25	Recitation of Holy Quran
14:25–14:40	Concluding Remarks
14:40–15:00	Awards for Best Oral Presentations and Posters
15:05–15:30	Certificate and Shield Distribution (for invited guests only)
15:30–16:00	Vote of thanks

Venue: Faisal Auditorium, Quaid-i-Azam Campus (New Campus), University of the Punjab, Lahore.

Workshops

Workshop-1	**Time Series Analysis of Remote Sensing Data Cubes using Google Earth Engine**
Objectives/Contents	This workshop will cover techniques for visualizing and processing remote-sensing data cubes for analysis. We will present theoretical and practical approaches in time series remote sensing data to determine 50 years of phenology and anomalies at local to global scales. This workshop includes: • Spatiotemporal Visualization • Time Series Gap Filling • Time Series Smoothing Filters.
Resource Person	 **Dr Hammad Gilani** Dr Hammad Gilani is working as a Researcher (Remote Sensing and GIS) at the International Water Management Institute (IWMI), Lahore. The resource person has over 15 years of work experience in cross-cutting issues in natural and human-induced ecosystem management, assisting policy-makers with tools and techniques using active and passive remote sensing and GIS techniques. He has proven expertise in Remote sensing; Earth observation; cloud computing; big geospatial analysis; technical and managerial experience in water, sanitation and hygiene (WASH); water accounting and hydrological modelling; climate change impacts on water availability; climate change vulnerability and risk assessment in water resources and energy sector; water security and distribution; disaster preparedness, response and recovery; forecast-based actions (anticipatory actions); impact-based actions; data collecting, analysis and management.
Date/Time	**13 March 2023, Monday (14:00– 16:00 Hours)**
Venue	**Classroom-1, Institute of Education & Research (IER), Quaid-i-Azam Campus, University of the Punjab, Lahore.**
Mode	**Face-to-face**

Institutional Capacity Building and Professional Development Program of RSGCRL

International Conference on

Remote Sensing, GIS and Climate Change (RSGCC-2023)

Applications, Strategies & Solutions

University of the Punjab, Quaid-i-Azam Campus, Lahore

Parallel Event

Workshop on

Time Series Analysis of Remote Sensing Data Cubes using Google Earth Engine

Objectives/Contents

This workshop will cover techniques for visualizing and processing remote-sensing data cubes for analysis. We will present theoretical and practical approaches in time series remote sensing data to determine 50 years of phenology and anomalies at local to global scales. This workshop includes:

- Spatiotemporal Visualization
- Time Series Gap Filling
- Time Series Smoothing Filters

Registration

Workshop Mode: **Face-to-Face**

Registration Fee:

Early-Bird (Till 06 March 2023)	**Rs. 1000/-**
Late Fee (After 06 March 2023)	**Rs. 1500/-**

No. of Seats: **30 participants**

Register Online: shorturl.at/bdST3

For payment and further details

http://rsgcc-2023.pu.edu.pk/workshops.html

rsgcc-2023@pu.edu.pk

Who Should Attend?

Students/Scholars of BS, MSc, BE, MPhil, MS & PhD and/or early & mid-career professionals.

Resource Person

Dr. Hammad Gilani

Researcher - Remote Sensing and GIS, International Water Management Institute (IWMI), Lahore.

The resource person has over 15 years of work experience in cross-cutting issues in natural and human-induced ecosystem management, assisting policy-makers with tools and techniques using active and passive remote sensing and GIS techniques.

Date, Time & Venue

13 March 2023, Monday, 14:00-16:00 Hours

Classroom-1, IER/Faisal Auditorium,
Quaid-i-Azam Campus,
University of the Punjab, Lahore.

Organized by

Dr Zia-ul-Haq
Chief Organizer (RSGCC-2023)
Director/PI (RSGCRL, CRS)

Dr Shahid Parvez
Conference Secretary (RSGCC-2023)
Team Lead & Lab Member, RSGCRL

Remote Sensing, GIS and Climatic Research Lab (RSGCRL), National Center of GIS and Space Applications (NCGSA), Centre for Remote Sensing, University of the Punjab, Lahore.

Workshop-2	**AI & ML for Hydrological Modeling**
Objectives/Contents	AI tools have become increasingly popular for hydrological modeling due to their ability to quickly and accurately process large amount of data for complex tasks. This workshop aims to provide participants with a comprehensive overview of how AI tools can be applied to hydrologic models. This workshop will focus on a case study illustrating how to use AI tools in hydrologic modeling. Participants will learn how to prepare data for AI models, develop the models, and analyze the results. The workshop will include hands-on practice material (different exercises and real-world hydrological data models) to help participants get more comfortable with using AI tools in hydrological modeling. This workshop will cover the following major topics: • Understanding the basics of Artificial Intelligence • Utilizing AI in hydrological modeling • Examining the benefits of AI in hydrology • A case study on data preparation and AI model development • Hands-on practice material to learn how to use AI tools in hydrologic models By the end of this workshop, participants would be able to identify the benefits of using AI in hydrology and will have the skills to develop their own AI hydrologic models.
Resource Person	**Dr Akif Rahim**  Deputy Director, Flood Risk Assessment Unit (FRAU), Govt. of the Punjab Irrigation Department, Lahore. Dr Akif Rahim is a hydrological modeling expert with extensive experience coupling climate change intensification into the models. He is highly proficient in computer programming languages such as R, C++, and Python. He is well versed in the latest technologies of machine learning and artificial intelligence as applied to hydrology. He has participated in numerous national and international conferences, such as the EGU, IAHS, and JPGU, to share his research and novel ideas. In addition to his professional work, Akif Rahim has collaborated with LUMS to develop an AI model for reservoir operation and with Google Pacific Asia to create framework of an AI-based flood forecasting tool for Pakistan. Currently, he is part of a research team at the Japan Meteorological Research Institute (MRI) developing high-resolution (1km*1km) climate projections for the Indus Basin. Furthermore, Dr Akif Rahim has taught courses in "Exploratory Data Analysis" and "Environmental Data Presentation" to M.Sc. students at the Czech University of Life Sciences, Prague, Czech Republic.
Date/Time	**13 March 2023, Monday (14:00– 16:00 Hours)– Parallel Workshop**
Venue	**Classroom-2, Institute of Education & Research (IER), Quaid-i-Azam Campus, University of the Punjab, Lahore.**
Mode	**Face-to-face**

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Parallel Event

Workshop on

AI & ML for Hydrological Modeling

Objectives/Contents

This workshop aims to provide participants with a comprehensive overview of how AI tools can be applied to hydrologic models. The workshop will cover the following major topics:

- Understanding the basics of Artificial Intelligence
- Utilizing AI in hydrological modeling
- Examining the benefits of AI in hydrology
- A case study on data preparation and AI model development

Registration

Workshop Mode: **Face-to-Face**

Registration Fee:

Early-Bird (Till 06 March 2023)	**Rs. 1000/-**
Late Fee (After 06 March 2023)	**Rs. 1500/-**

No. of Seats: **30 participants**

Register Online: shorturl.at/bdST3

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Resource Person

Mr. Akif Rahim

Deputy Director in Flood Risk Assessment Unit (FRAU), Govt. of the Punjab Irrigation Department, Lahore.

The resource person has hydrological modeling expertise with extensive experience of coupling climate change intensification into hydrological models using R, C++, and Python. He is well versed in the latest technologies of machine learning and artificial intelligence as applied to hydrology.

Date, Time & Venue

13 March 2023, Monday, 14:00-16:00 Hours (Parallel Workshop)

Classroom-2, IER/Faisal Auditorium,
Quaid-i-Azam Campus,
University of the Punjab, Lahore.

Organized by

Dr Zia-ul-Haq
Chief Organizer (RSGCC-2023)
Director/PI (RSGCRL, CRS)

Dr Shahid Parvez
Conference Secretary (RSGCC-2023)
Team Lead & Lab Member, RSGCRL

Remote Sensing, GIS and Climatic Research Lab (RSGCRL), National Center of GIS and Space Applications (NCGSA), Centre for Remote Sensing, University of the Punjab, Lahore.

Workshop-3	**OGC's API - from WMS/WFS to OPEN API (Online and Free)**
Objectives/Contents	The workshop explains the basics of the traditional and the new architectural approaches and the associated data encoding in XML and JSON. Essential characteristics of HTTP are introduced as basis for the REST approach. Parts of the new OGC APIs are briefly introduced and demonstrated by sample applications.
Resource Person	 **Dr Franz-Josef Behr** Professor of Visualization and Processing of Geospatial Data, Stuttgart University of Applied Sciences, Germany. Study Dean Master Photogrammetry and Geoinformatics Co-chair ICA Commission on SDI & Standards (http://sdistandards.icaci.org/) Co-Founder of "Applied Geoinformatics for Society and Environment" (http://applied-geoinformatics.org/) Member SDI Advisory Board, State of Baden-Württemberg, Germany Author of Strategisches GIS-Management Laboratory for interoperable, and open-source Geospatial Software, Data and Standards (OSGeo-Lab) OGC Business Alternate for HFT Stuttgart, Co-Maintainer of ICA's Standards Wiki Member NA 005-03-03 AA Geoinformation (CEN/TC 287+ISO/TC 211) Co-Editor, Free and Open Source Software for Geospatial Conference Proceedings.
Date/Time	**13 March 2023, Monday (16:00– 17:30 Hours)**
Venue	**Classroom-1, Institute of Education & Research (IER), Quaid-i-Azam Campus, University of the Punjab, Lahore.**

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Parallel Event

Workshop on

OGC's API

from WMS/WFS to Open API

Objectives/Contents

The workshop explains the basics of the traditional and the new architectural approaches and the associated data encoding in XML and JSON. Essential characteristics of HTTP are introduced as basis for the REST approach. Parts of the new OGC APIs are briefly introduced and demonstrated by sample applications.

Registration

Register Online:

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F R E E

For further details

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Resource Person

Dr Franz-Josef Behr

Professor of Visualization and Processing of Geospatial Data, Stuttgart University of Applied Sciences, Germany. Study Dean Master Photogrammetry and Geoinformatics.

Co-chair ICA Commission on SDI & Standards

Co-Founder of "Applied Geoinformatics for Society and Environment"

Member SDI Advisory Board, State of Baden-Württemberg, Germany.

Date, Time & Venue

13 March 2023, Monday, 16:00-17:30 Hours

Classroom-1, IER/Faisal Auditorium,
Quaid-i-Azam Campus,
University of the Punjab, Lahore.

Organized by

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Director/PI (RSGCRL, CRS)

Dr Shahid Parvez
Conference Secretary (RSGCC-2023)
Team Lead & Lab Member, RSGCRL

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Workshop-4	**Python for GIS**
Objectives/Contents	It is related to the use of Python for GIS, tool development, workflow customization, and automation. To begin, we will see a simple workflow automation example, and finally, we will see a case study.
Resource Person	 **Dr Muhammad Athar Javaid** Assistant Professor, Department of Space Science, University of the Punjab, Lahore. PhD from University Stuttgart, Germany in Satellite Geodesy. MSc Geo-engine from University Stuttgart, Germany. MSc GIS and MSc Space Science from University of the Punjab, Lahore. His study interests include, development of GIS tools, data mining, map projection and datum transformation, ellipsoid/spheroid using programming languages.
Date/Time	**14 March 2023, Tuesday (11:00– 13:00 Hours)**
Venue	**Classroom-1, Institute of Education & Research (IER), Quaid-i-Azam Campus, University of the Punjab, Lahore.**
Mode	**Face-to-face**

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Parallel Event

Workshop on

Python for GIS

Objectives/Contents

This workshop is related to the use of Python for GIS, tool development, workflow customization, and automation. To begin, we will see a simple workflow automation example, and finally, we will see a case study.

Registration

Workshop Mode: **Face-to-Face**

Registration Fee:

Early-Bird (Till 06 March 2023)	**Rs. 1000/-**
Late Fee (After 06 March 2023)	**Rs. 1500/-**

No. of Seats: **30 participants**

Register Online: shorturl.at/bdST3

For payment and further details

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Who Should Attend?

Students/Scholars (BS, MSc, BE, MPhil/MS, and PhD programs) and/or early & mid-career professionals

Resource Person

Muhammad Athar Javaid
Assistant Professor,
Department of Space Science.
Ph.D. from Germany in Satellite Geodesy. Study interests include, Development of GIS tools, Map projection, and datum transformation, ellipsoid/spheroid using programming languages.

Date, Time & Venue

14 March 2023, Tuesday, 11:00-13:00 Hours

Classroom-1, IER/Faisal Auditorium,
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Organized by

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Conference Secretary (RSGCC-2023)
Team Lead & Lab Member, RSGCRL

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Workshop-5	**Analyzing Future Hydro-climatic Projections Using CDO**
Objectives/Contents	With the development and availability of advanced tools and/or data like; Climate Data Operators (CDO) and global climatic datasets, there is a need to build the capacity of climate and water professionals. The proposed training on Analyzing Future Hydro-climatic Projections Using CDO is of basic to intermediate level and suitable for the researchers, experts and other stakeholders working in environment, earth sciences, climate and water and related fields. CDO is a command line suite developed by the Max Planck Institute of Germany. CDO is a collection of command line Operators to manipulate and analyze Climate and NWP model Data. This workshop aims to provide participants with a comprehensive overview of how CDO can be applied for analyzing Future Hydro-climatic Projections. This workshop will cover the following topics: • Understanding the basics of CDO • Accessing IPCC climate change data and future projections • Analyzing the future Hydro-climatic Projections and creating a time series for a case study • Hands-on practice material about using CDO in future hydro-climatic data
Resource Person	**Dr Aftab Nazeer**  Assistant Professor, Agricultural Engineering Department, BZ University, Multan. He has recently completed PhD from TU Delft/IHE Delft, the Netherlands. His research work was focused on Analyzing the Hydro-climatic regime of snow covered and glacierised Upper Indus Basin under current and future climates. Dr Aftab is an agricultural engineer, hydro-climatic modeler, passionate programmer and keen on remote sensing and GIS. He has collaborated on various projects, including "enhancing transboundary water cooperation through economic valuation of biodiversity & ecosystem services in Kabul River Basin" and "Achieving SDG 6: Inclusive Governance of Urban Water & Sanitation". His research interests include; hydro-climatic modelling, snow and glacier dynamics, hydrological extremes, climate change impacts, ground & remote sensing data handling, and computer programming.
Date/Time	**14 March 2023, Tuesday (14:00– 16:00 Hours)**
Venue	**Classroom-1, Institute of Education & Research (IER), Quaid-i-Azam Campus, University of the Punjab, Lahore.**
Mode	**Face-to-face**

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Parallel Event

Workshop on

Analysing Future Hydro-climatic Projections Using CDO

Objectives/Contents

With the development and availability of advanced tools and/or data like; Climate Data Operators (CDO) and global climatic datasets, there is a need to build the capacity of climate and water professionals. The proposed training on Analysing Future Hydro-climatic Projections Using CDO is of basic to intermediate level and suitable for the researchers, experts and other stakeholders working in environment, earth sciences, climate and water and related fields. This workshop will cover the following topics:

- Understanding the basics of CDO
- Accessing IPCC climate change data/future projections
- Analyzing the future Hydro-climatic Projections and creating a time series for a case study
- Hands-on practice material about using CDO in future hydro-climatic data

Resource Person

Dr Aftab Nazeer

Assistant Professor, Agricultural Engineering Department, BZ University, Multan. He has recently completed Ph.D. from TU Delft/IHE Delft, the Netherlands. His research work was focused on Analysing the Hydro-climatic regime of snow-covered and glacierised Upper Indus Basin under current and future climates. Dr. Aftab is an agricultural engineer, hydro-climatic modeler, passionate programmer, and keen on remote sensing and GIS.

Registration

Workshop Mode: **Face-to-Face**

Registration Fee:

Early-Bird (Till 06 March 2023)	**Rs. 1000/-**
Late Fee (After 06 March 2023)	**Rs. 1500/-**

No. of Seats: **30 participants**

Register Online: shorturl.at/bdST3

Date, Time & Venue

14 March 2023, Tuesday, 14:00-16:00 Hours

Classroom-1, IER/Faisal Auditorium,
Quaid-i-Azam Campus,
University of the Punjab, Lahore.

For payment and further details

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Who Should Attend?

Students/Scholars (BS, MSc, BE, MPhil/MS, and PhD programs) and/or early & mid-career professionals

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Chief Organizer (RSGCC-2023)
Director/PI (RSGCRL, CRS)

Dr Shahid Parvez
Conference Secretary (RSGCC-2023)
Team Lead & Lab Member, RSGCRL

Remote Sensing, GIS and Climatic Research Lab (RSGCRL), National Center of GIS and Space Applications (NCGSA), Centre for Remote Sensing, University of the Punjab, Lahore.

Workshop-6	**Satellite Image Classification using Machine Learning algorithms in R.**
Objectives/Contents	Most of the classification algorithms are found in commercial software, which are not offered for free. The remote sensing community has no liberty to change its tuning parameters, etc., to achieve desired meaningful results. In this workshop, I shall be focusing on hands-on demonstration by using open-source advanced machine learning algorithms such as k-NN, SVM, etc. for the classification of multispectral remotely sensed images.
Resource Person	**Dr rer. nat. Sami Ullah** Assistant Professor/Head of the Forestry & Range Management, University of Kohsar, Muree, Pakistan. Co-PI (Forest Resources Assessment), GIS and Space Application in Geoscience Lab (G-SAG), National Center of GIS and Space Application (NCGSA), Institute of Space Technology (IST), Islamabad. 
Date/Time	**15 March 2023, Wednesday (11:00– 13:00 Hours)**
Venue	**Classroom-1, Institute of Education & Research (IER), Quaid-i-Azam Campus, University of the Punjab, Lahore.**
Mode	**Face-to-face**

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Parallel Event

Workshop on

Satellite Image Classification using Machine Learning algorithms in R

Objectives/Contents

Most of the classification algorithms are found in commercial software, which are not offered for free. Furthermore, the remote sensing community has no liberty to change its tuning parameters, etc., to achieve meaningful results. In this training workshop, we will be focusing on hands-on training by using open-source advanced machine learning algorithms such as k-NN, SVM, etc. for the classification of multispectral data.

Registration

Workshop Mode: **Face-to-Face**

Registration Fee:

Early-Bird (Till 06 March 2023)	**Rs. 1000/-**
Late Fee (After 06 March 2023)	**Rs. 1500/-**

No. of Seats: **30 participants**

Register Online: shorturl.at/bdST3

For payment and further details

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Who Should Attend?

Students/Scholars (BS, MSc, BE, MPhil/MS, and PhD programs) and/or early & mid-career professionals

Resource Person

Dr rer.nat. Sami Ullah
Assistant Professor & Head of
the Forestry & Range Management
University of Kohsar, Muree, Pakistan.
Co-PI (Forest Resources Assessment)
GIS and Space Application in Geoscience Lab (G-SAG), National Center of GIS and Space Application (NCGSA), IST, Islamabad.

Date, Time & Venue

15 March 2023, Wednesday, 11:00-13:00 Hours

Classroom-1, IER/Faisal Auditorium,
Quaid-i-Azam Campus,
University of the Punjab, Lahore.

Organized by

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Dr Shahid Parvez
Conference Secretary (RSGCC-2023)
Team Lead & Lab Member, RSGCRL

Remote Sensing, GIS and Climatic Research Lab (RSGCRL), National Center of GIS and Space Applications (NCGSA), Centre for Remote Sensing, University of the Punjab, Lahore.

Workshop-7	**Remote Sensing Based Tools for Air Pollution Monitoring**
Objectives/Contents	Air quality in Pakistan's major cities is worsening at higher rate as result of rapid urbanisation and growth of road transport. Due to the liberal leasing system adopted by the financial institutions, the density of transport has increased many folds and the present roads infrastructure cannot cater the need of growing automobile flow. As a result, frequent traffic jams, road accidents and exponential increase in air pollution levels is experienced not only in the big cities but also along the major national highways. Lack of air quality monitoring infrastructure across the Pakistan is major hurdle in regulating the air quality at all levels and regional imbalance too. Conventional air quality monitoring network cost is very high and country like Pakistan is unable to afford this. Satellite based air pollution monitoring has huge potential to fill this gap. However, the validation of tropospheric trace gas observations from satellite observations is a challenging task for several reasons e.g. vertical sensitivity of satellite instruments, spatial extent of the satellite ground pixel, cloud coverage etc. This training is designed to experience the data retrieval algorithms and validate satellite data from OMI and TropOMI by using MAX-DOAS observations for both at fixed locations and at a moving platform.
Resource Person	**Prof Dr Muhammad Fahim Khokhar**  Prof Dr Muhammad Fahim Khokhar is working as a Tenured Professor at the Institute of Environmental Sciences and Engineering, School of Civil and Environmental Engineering, National University of Sciences and Technology (IESE, SCEE, NUST) Islamabad, Pakistan. He had his Doctoral degree from Germany followed by three post-doctorates from Germany and France. He excelled in satellite remote sensing, air quality monitoring and assessment, climate change and its impacts, DOAS (differential optical absorption spectroscopy) technique, data retrieval algorithm, and analysis. He worked on various European research projects, like NOVAAC, GEMS, and MACC within the 6th and 7th framework of European commissions. Recently, he has been selected as a member of Pakistan's Climate Change Council, Ministry of Climate Change, Govt of Pakistan. At IESE-NUST, Dr Khokhar is the Director of C-CARGO (Climate Change and Atmospheric Research Group) and CEO of Spin-off named Environmental Services and Sustainable Solutions (ES3). The Focus of his research includes climate change, impacts, mitigation and adaptation, air quality monitoring, and assessment. He has obtained various International and national research grants and consultancies. He has a commendable research record and was conferred the SCEE-Best researcher award for the year 2020-21. He has published his work in many scientific journals of international repute such as Nature, Journal of Hazardous material, AMT, Environmental Pollution, Atmospheric environment, etc.
Date/Time	**15 March 2023, Wednesday (11:00– 13:00 Hours)– Parallel Workshop**
Venue	**Classroom-2, Institute of Education & Research (IER), Quaid-i-Azam Campus, University of the Punjab, Lahore.**
Mode	**Face-to-face**

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Parallel Event

Workshop on

Remote Sensing Based Tools for Air Pollution Monitoring

Objectives/Contents

Air quality in Pakistan's major cities is worsening at higher rate as result of rapid urbanization and growth of road transport. Lack of air quality monitoring infrastructure across the Pakistan is major hurdle in regulating the air quality at all levels and imbalance too. Satellite based air pollution monitoring has huge potential to fill this gap. This training is designed to experience the data retrieval algorithms and validate satellite data from OMI and Tropomi by using MAX-DOAS observations for both fixed and moving platforms.

Registration

Workshop Mode: face to Face

Registration Fee:

Early-Bird	(Till 06 March 2023)	Rs. 1000/-
Late Fee	(After 06 March 2023)	Rs. 1500/-

No. of Seats: **30 participants**

Register Online: **Registration** Link

For payment and further details

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Resource Person

Prof. Dr Muhammad Fahim Khokhar
Tenured Professor at Institute of Environmental Sciences and Engineering, School of Civil and Environmental Engineering, National University of Sciences and Technology (IESE, SCEE, NUST) Islamabad, Pakistan. Director of C-CARGO (Climate Change and Atmospheric Research Group) and CEO of Spin-off named Environmental Services and Sustainable Solutions (ES^3).

Date, Time & Venue

15 March 2023, Wednesday, 11:00-13:00 Hours
Parallel Workshop
Classroom-2, IER/Faisal Auditorium,
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Organized by

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Remote Sensing, GIS and Climatic Research Lab (RSGCRL), National Center of GIS and Space Applications (NCGSA), Centre for Remote Sensing, University of the Punjab, Lahore.

For queries and more information, please contact:

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