



## International Conference on Himalayan Cryosphere-2020

*Divecha Centre for climate change  
Indian institute of Science Bengaluru*

### SCHEDULE



19 <sup>th</sup> October 2020		
Inauguration		
14.00-14.10	Welcome	S.K Satheesh Dean IISc and Chairman DCCC
14.10-14.20	About the conference	Anil V Kulkarni Divecha Centre for Climate Change, IISc
14.20-14.25	Vote of Thanks	Arya A R Divecha Centre for Climate Change, IISc
Keynote Lecture		
14.30-15.30	State of Cryosphere in High Mountain Asia	Tobias Bolch University of St Andrews, UK
15.30-16.00	<b>Break</b>	
16.00-17.00	Recent advances in Himalayan Glaciology	Anil V Kulkarni Divecha Centre for Climate Change, IISc
17.00-18.00	Hazards of Glacier Lake Outbursts Floods in High Mountain Asia	Umesh Harithashya University of Dayton, Ohio
20 <sup>th</sup> October 2020		
Technical session I - Remote sensing and Cryosphere observations		
14.00-14.45	<b>Lead talk: Salient results of Cryosphere program of ISRO</b>	I.M. Bahuguna Space Application Centre, Ahmedabad
14.45-15.00	<b>Break</b>	
15.00-15.10	Integrated study of Himalayan glaciers using field observations and Remote Sensing data	Akriti Kulshrestha Space Applications Centre, Ahmedabad
15.10-15.20	Glaciers Mapping and Monitoring in Mago River basin of Arunachal Pradesh using Landsat data and Automatic Glacier Extraction Index	P. C. Vanlalnunchhani NERIST, Itanagar

15.20-15.30	Role of Ku-band (13.5 GHz) based Scatterometer Satellite (SCATSAT-1) in Cryospheric applications	Sartajvir Singh Chitkara University, Punjab
15.30-15.40	The significant issues of cryosphere process on dynamic climate change	Prabhat Kumar Banaras Hindu University, UP
15.40-15.50	Siachen glacier features classification using POLSAR data and deep neural network model	Ruby Panwar Indian Institute of Technology -Bombay
15.50-16.00	Estimation of Glacier Boundaries over the Himalayas using Deep Learning Approach	Vishakha Sood Chitkara University, Punjab
16.00-16.10	<b>Break</b>	
16.10-16.20	Vegetation line response to glacier changes in high-altitude Himalaya	Debmita Bandyopadhyay Indian Institute of Technology -Bombay
16.20-16.30	Quasiquicentennial response of Janapa-Garang glacier, Baspa basin, Western Himalayas, India	Chinmay Dongare The Maharaja Sayajirao University of Baroda
16.30-16.40	Behaviour of Sentinel-1 backscattering for seasonal snow: A time series analysis using Google Earth Engine	Akshay Patil Indian Institute of Technology -Bombay
16.40-16.50	Temporal Changes (1962-2018) in the two neighbouring glaciers (Raj Bank and Kosa) of Dhauliganga Basin, Central Himalaya, India	Ankit Pandey HNB Garhwal University
16.50-17.00	A multiparametric approach for understanding the uncertainties in behaviour of the Kangriz glacier – the largest glacier of the Suru sub-basin, western Himalaya	Siddhi Garg Wadia Institute of Himalayan Geology, Dehradun
17.00-17.10	Glacier changes in the Alaknanda Basin from 1882 to 2018	Remya S N Divecha Centre for Climate Change, IISc, Bangalore
17.10-17.20	Glacial recession and its impact on the Peri-Glacial Geomorphology, Chandra basin, Lahaul and Spiti, Himachal Pradesh, India	Sunil Dhar Central University, Jammu
17.20-18.00	<b>Discussion</b>	
<b>21<sup>st</sup> October 2020</b>		
<b>Technical Session II - Snow cover and snow depth studies</b>		
14.00-14.45	<b>Lead Talk: Climate Change and Himalayan Snow Cover</b>	H.S Negi Snow and Avalanche Study Establishment, Chandigarh
14.45-15.00	<b>Break</b>	
15.00-15.10	Spatial and temporal snow cover variability and its significance in Himalayan-Karakoram region using 15 years of AWiFS data	Sushil Kumar Singh Space Applications Centre, Ahmedabad

15.10-15.20	Estimation of Snow Depletion Curve for Gangotri Basin using Multi-Source Remote Sensing Data	Prateek Verma Indian Institute of Technology- Bombay
15.20-15.30	Snow depth retrieval using SAR interferometry technique	Nagajothi Venkatesan Jyothy Institute of Technology, Bangalore
15.30-15.40	An analysis on the changes of Himalayan snow depth, air temperature and relative humidity	Dency V Panicker Pandit Deendayal Petroleum University, Gandhinagar
15.40-15.50	Investigation of changes in Snow Cover Fraction under different future warming scenarios using coupled climate model	Debangshu Banerjee Indian Institute of Remote Sensing, Dehradun
15.50-16.00	<b>Break</b>	
<b>Technical Session III- Glacier surface velocity, volume and stored water</b>		
16.00-16.10	Recent Spatial Variability in Ice Velocity of Himalayan-Karakoram Glaciers and its Significance	Naveen Tripathi Space Application Centre, Ahmedabad
16.10-16.20	Velocity fluctuation of Siachen glacier, Shyok basin, Karakoram	Sivaranjani Jyothy Institute of Technology, Bengaluru
16.20-16.30	Observing Bara Shigri glacier velocity changes in 15 years using radar Interferometry technique	Bala Raju Nela Indian Institute of Technology- Bombay
16.30-16.40	Field based estimation of glacier surface velocity (2014-2018) of Satopanth glacier, central Himalaya, Uttarakhand	Sunil Singh Shah Hemvati Nandan Bahuguna Garhwal University, Uttarakhand,
16.40-16.50	Comparative Analysis of Glacier Surface Velocity derived using Optical and SAR datasets	Sivaranjani Jyothy Institute of Technology, Bengaluru
16.50-17.00	An investigation of the volume-area scaling relation for mountain glaciers	Argha Banerjee IISER, Pune
17.00-17.10	A review of methods approached for estimating Glacier volume	Shivang Alok Pandit Deendayal Petroleum University, Gandhinagar
17.10-17.20	Glacier stored water in Indus river basin	Ashutosh Kulkarni, BITS-Pilani, Goa
17.20-17.30	Estimation of glacier stored water in the Bhaga basin, Himalaya	Gopika J S Divecha Centre for Climate Change, IISc, Bangalore
17.30-18.00	<b>Discussion</b>	

**22<sup>nd</sup> October 2020**

Technical Session IV- Cryosphere and Climate change		
14.00-14.45	<b>Lead Talk: Mass balance of Himalayan glaciers</b>	M.F Azam Indian Institute of Technology, Indore
14.45-15.00	<b>Break</b>	
15.00-15.10	Moisture Sources for Precipitation and Hydrograph Components of the Chandra Basin, Western Himalaya	Ajit Singh National Centre for Polar and Ocean Research, Goa
15.10-15.20	Assessment of Himalayan climate; the need for high-resolution climate modelling strategies	Sabin TP Indian Institute of Tropical Meteorology, Pune
15.20-15.30	Glacier's surface temperature change and AOD variations in pre and post ablation season during 2000–2019 over Sikkim Himalaya	Khushboo Sharma Sikkim University, Sikkim
15.30-15.40	An enhanced T-index model accounting for climatic and non-climatic parameters and its implication for the debris-covered Himalayan glacier	Indira Karakoti Wadia Institute of Himalayan Geology, Dehradun
15.40-15.50	Contemporary inorganic carbon fluxes from rapidly changing glacierized watersheds of the Himalaya	Tanuj Shukla IIT-Kanpur
15.50-16.00	<b>Break</b>	
Technical Session V- Glacier mass balance		
16.00-16.10	New Approach for Estimation of Glacier Mass Balance Gradient and Annual Surface Mass Balance using Remotely Sensed Datasets	Anita Chandrasekharan Indian Institute of Technology- Bombay
16.10-16.20	Glacier mass balance estimation in Ganga basins, Garhwal Himalaya	Arya A R Divecha Centre for Climate Change, IISc, Bangalore
16.20-16.30	Modelling mass changes of Dokriani (Central Himalaya) and Chhota Shigri (Western Himalaya) glaciers, India using energy balance approach	Smriti Srivastava Indian Institute of Technology-Indore
Technical Session VI- Glacier melt and isotopic studies		
16.30-16.40	Variability in snow/ice melt contribution to river discharge near snout of Gangotri glacier in Bhagirathi basin in Garhwal Himalaya	Suneel Kumar Joshi National Institute of Hydrology, Roorkee
16.40-16.50	Stream Flow Modelling and Contribution of Snow and Glacier-melt in Highly Glacierized Karakoram Himalayan Basin	Chanchal Divecha Centre for Climate Change, IISc, Bangalore
16.50-17.00	Estimating the supraglacial debris thickness and spatial ice melt distribution over Batal Glacier (Chandra basin), western Himalaya	Bhanu Pratap National Centre for Polar and Ocean Research, Goa
17.00-17.10	Stable isotope systematics of a Himalayan river: Satluj, its tributaries and associated groundwater bodies	Akhtar Jahan Indian institute of technology, Roorkee

17.10-17.20	Estimation of Glacial Melt-Water Contribution in Baspa Basin Using Stable Isotope Analysis	Himanshu Bhagat Divecha Centre for Climate Change, IISc, Bangalore
17.20-18.00	<b>Discussion</b>	
<b>23rd October 2020</b>		
<b>Technical Session VII - Cryosphere: risk assessment and mitigation</b>		
14.00-14.45	<b>Lead Talk: Climate change over Himalaya</b>	Rajiv Kumar Chaturvedi BITS-PILANI, Goa
14.45-15.00	<b>Break</b>	
15.00-15.10	Understanding the Formation of Pro-Glacial Lakes and The Dynamics of Glacial Lake Outburst Flood	Aishwarya Nair University of Mumbai
15.10-15.20	Surging glacier dynamics in the Indus Basin	Debmita Bandyopadhyay Indian Institute of Technology-Bombay
15.20-15.30	GLOF process chain modeling and future hazard of the South Lhonak Lake and its hydraulic uncertainty	Ashim Sattar University of Dayton
15.30-15.40	Modelling Glacier Lake Evolution using 1D Numerical Model and Remotely Sensed Satellite Data	Prateek Gantayat Lancaster University
15.40-15.50	Glacier and Glacial Lake Dynamics in Changing Climate Scenario in Indian Himalaya	Pratima Pandey Indian Institute of Remote Sensing, Dehradun
15.50-16.00	A multi criteria decision analysis-based approach to study GLOF susceptibility in Changme Khangpu basin of Sikkim Himalaya	Rajeev Rajak Sikkim University, Sikkim
16.00-16.10	<b>Break</b>	
16.10-16.20	Glacial lake Evolution and GLOF Hazard assessment using Geospatial technology in Gepang Ghat Glacier region, Himachal Pradesh	Rohit Kumar Indian Institute of Technology, Roorkee
16.20-16.30	A 20-year case study of detected glacial lakes & identification of potentially dangerous lakes for GLOF in Pithoragarh district of Uttarakhand, India	Sanjay Kumar Dwivedi Kumaun University, Nainital
16.30-16.40	Snow avalanche hazard risk assessment, mapping and mitigation over Western Himalaya using World View satellite images	Dhiraj Kumar Singh Snow and Avalanche Study Establishment, Chandigarh
16.40-16.50	<b>Break</b>	
<b>Technical Session VIII- Climate research and Policy making</b>		
16.50-17.00	Integration of Cryosphere: Suggestions for Policy Makers	Bhumika Sharma Himachal Pradesh University

17.00-17.10	Potential impacts of climate change on water availability and hydropower generation in a glaciated catchment in Western Himalaya	Tejal Shirsat Divecha Centre for Climate Change, IISc, Bangalore
17.10-17.20	Mapping surface features of Debris-covered Glaciers in Indian Himalayas using UAV Imagery	RAAJ Ramsankaran Indian Institute of Technology- Bombay
17.20-17.30	Discernible role of dust in the spatial heterogeneity of observed snowmelt over Himalayas	Chandan Sarangi Indian Institute of Technology- Madras
17.30-18.00	<b>Discussion</b>	