

Program for CEOS WGCV SAR cal/val Workshop 2024

Hosted by Space Applications Centre (ISRO), Ahmedabad, India

12 – 15 November 2024

Venue: Yashpal Auditorium, Space Applications Centre (ISRO), Ahmedabad

12 November 2024, TUESDAY		
09:00 – 10:00	Registration	
10:00 – 10:50	INAUGURAL SESSION	
10:50 – 11:15	Tea Break	
	<i>SESSION 1: Calibration of running missions</i> <i>Chair: Dirk Geudtner; Co-chair: Debjyoti Dhar</i>	
11:15 – 13:20	<ol style="list-style-type: none"> 1. Sentinel 1 instruments status product performance and evolutions 2. RADARSAT 2 Image Quality and Calibration Update 3. EOS-04 Data Products Calibration Updates 4. Performance evaluation of EOS 04 8 beam MRS mode Dual Polarimetric and Compact Polarimetric data 5. TerraSAR X / TanDEM X Mission and Calibration Status with a Focus on Rainforest LTSM Time Series Data 6. Status of ALOS 4 Initial Check out and Calibration (Online) 	<p><i>Muriel Pinheiro</i></p> <p><i>Dan Williams</i></p> <p><i>Raghav Mehra</i></p> <p><i>Sanid Chirakkal</i></p> <p><i>Patrick Klenk</i></p> <p><i>Takeshi Motohka</i></p>
13:20 – 14:20	<i>LUNCH BREAK</i>	

	<i>SESSION 2: Calibration of future SAR missions</i> <i>Chair: C V N Rao; Co-chair: Muriel Pinheiro</i>	
14:20 – 17:00 (Tea Break 16:05 - 16:20)	<ol style="list-style-type: none"> 1. Sentinel-1C In-Orbit SAR Calibration Activities 2. DLRs Independent Verification of the Sentinel 1C System Calibration 3. Harmony the tenth Earth Explorer Mission 4. MDA CHORUS Mission Overview and Calibration Plan 5. Calibration Concept for the upcoming ESA ROSE L Mission 6. Radiometric calibration and Image quality assessment of NISAR 7. The CalVal Strategy for ESAs Biomass Mission 	<p><i>Dirk Geudtner</i></p> <p><i>Patrick Klenk</i></p> <p><i>Björn Rommen</i></p> <p><i>Ron Caves/ Dan Williams</i></p> <p><i>Jens Reimann</i></p> <p><i>Geoffrey Gunter</i></p> <p><i>Björn Rommen</i></p>
17:00 – 17:30	<i>Discussions</i>	
17:30 – 18:00	POSTER SESSION As in Annexure A1	
18:00 – 18:15	<i>HIGH TEA & Adjourn</i>	

13 November 2024, WEDNESDAY

	<i>SESSION 3: Calibration methodology and techniques</i> <i>Chair: Patrick Klenk; Co-chair: Santhisree B.</i>	
09:30 – 10:55	<ol style="list-style-type: none"> 1. SAR Calibration Toolbox an open source tool for the quality assessment of SAR data 2. Software Tool for Characterization of Extended Targets in SAR Data 3. An approach for targeting accuracy evaluation for NISAR 4. Site Suitability Analysis for Corner Reflector Deployment 	<p><i>Andrea Recchia/Beatrice Mai</i></p> <p><i>Tanishka Gaur</i></p> <p><i>Bhaskar Dubey</i></p> <p><i>Ichchhit Baranwal</i></p>

10:55 - 11:15	Tea Break	
	<i>SESSION 4: Calibration & Validation targets and sites</i> <i>Chair: Jens Reimann; Co-chair: VM Ramanujam</i>	
11:15 - 13:00	<ol style="list-style-type: none"> 1. Development of DLRs Next Generation C band Calibration Transponders for future SAR Missions <i>Sebastian Raab</i> 2. Establishment of inhouse L&S-band calibration facility for NISAR <i>Santhisree B.</i> 3. Polarimetric calibration of DLRs dual band transponder and first polarimetric L band SAR measurements <i>Anna Maria Büchner</i> 4. Radiometric and Polarimetric Characterization of ISROs MultiBand Active Radar Calibrator <i>P V Jayasri</i> 5. Deployment of CRs for geolocation accuracy assessment and displacement monitoring <i>Bruce Chapman</i> 	
13:00 - 14:00	<i>LUNCH BREAK</i>	
	<i>SESSION 5: Innovative concepts and processing algorithms</i> <i>Chair: Marco Lavallo; Co-chair: Deepak Putrevu</i>	
14:00 - 16:45 (Tea Break 15:45 - 16:00)	<ol style="list-style-type: none"> 1. RFI Suppression in P Band SAR <i>Parikshit Parasher</i> 2. NISAR S-SAR DBF Calibration <i>Samneet Thakur</i> 3. Unambiguous Estimation of Deformation in GBSAR through Successive Referencing <i>Ameya Kesarkar</i> 4. Sentinel 1 Temperature Compensation Emulation S 1A B Results and S 1C Commissioning Preparation <i>Andrea Recchia/Beatrice Mai</i> 5. GAFA the Geometry and Frequency Agnostic SAR Processor <i>Björn Rommen</i> 6. Effects of Finite Pulse Length in SweepSAR Systems <i>Brian P. Hawkins</i> 	

16:45 – 17:15	<i>Discussions</i>
17:15 – 17:45	POSTER SESSION As in Annexure A2
17:45 – 18:00	<i>HIGH TEA & Adjourn</i>

14 November 2024, THURSDAY

	<i>SESSION 6: Calibration of SAR system parameters for geophysical applications including AIS based</i>	
	<i>Chair: Bjorn Rommen; Co-chair: C. Patnaik</i>	
9:30 – 13:10 (Tea Break 11:10 – 11:30)	<ol style="list-style-type: none"> 1. Comparative Analysis of SAR and GNSS R Signatures for Potential Geo physical Applications <i>Hari Priya S.</i> 2. Ground Based Synthetic Aperture Radar Calibration and Validation for Land Surface Deformation <i>Arunkumar H.</i> 3. On the simulation of S-band backscatter for ocean calibration of the forthcoming NISAR data <i>Abhisek Chakraborty</i> 4. SAR vs AIS correlation for estimation of vessel detection performances and verification of reported velocity <i>Guillaume S. A. HAJDUCH</i> 5. ISROs SAR ship detection products for Maritime Domain Awareness <i>Wasim Akram</i> 6. Development of Novel and Adaptive Vessel AIS Association Algorithm for NovaSAR AIS and Maritime Mode Data <i>Samvram Sahu</i> 7. Deep Vision for Seismic Signal Detection in SAR Interferograms with Reference to NISAR Applications <i>Alka Saini</i> 	

	<i>SESSION 7: Analysis Ready Data Products</i> <i>Chair: Rashmi Sharma; Co-chair: Usha Sundari Ryali</i>	
	<ol style="list-style-type: none"> 1. Open source developments for processors and ARD products of ESA SAR missions <i>Clement Albinet</i> 2. ISROs Roadmap for Analysis Ready SAR Data Products <i>Raghav Mehra</i> 3. CEOS Analysis Ready Data for SAR Status update 2024 <i>Ake Rosenqvist</i> 4. Data Quality Assessment of EOS-04 SAR Analysis Ready Data using in-house developed Data Quality Evaluation Software <i>Maneesha Gupta</i> 	
13:10- 14:00	<i>LUNCH BREAK</i>	
	<i>SESSION 8: SARCALNET</i> <i>Chair: Bruce Chapman; Co-chair: Anuja Sharma</i>	
14:00 – 15:40	<ol style="list-style-type: none"> 1. The development of the SARCalNet database and website <i>Muriel Pinheiro</i> 2. Australian activities in SAR calibration and validation <i>Matt Garthwaite</i> 3. Pan-India Corner Reflector network development <i>Shweta Sharma</i> 4. Analysis of KARI Corner Reflector in Mongolia Site for KOMPSAT 6 Calibration and Image Quality Measure <i>Horyung Jeong</i> 5. A Wetland Mask for SARCalNet for Improved Radiometric Calibration over Natural Forest Targets <i>Ake Rosenqvist</i> 	
15:40 – 16:00	Tea Break	
16:00 – 17:00	SARCALNET Submission review: Moderator: Bruce Chapman	
17:00 – 17:30	<i>Discussions</i>	
17:30 – 18:00	POSTER SESSION As in Annexure A3	

18:30	<i>Departure to Dinner venue</i>
19:00 – 21:00	<i>Dinner</i>
21:00	<i>Departure to Hotel</i>

**(15+5=20 minutes for each presentation)*

15 November 2024, FRIDAY		
<i>NISAR SPECIAL SESSION</i>		
09:00 - 09:15	NISAR Overview and status update	<i>Paul Rosen & Chaitra Rao</i>
09:15 - 09:30	NISAR : Targeted Science & Applications, and Utilization programme	<i>Rashmi Sharma/Deepak Putrevu</i>
09:30 - 09:50	NISAR products, Bhoonidhi, and ASF DAAC	<i>Ramanujam V.M. / Usha S.R. / F. Meyer / P. Rosen</i>
09:50 – 10:05	SAR Instrument Characteristics and Calibratable Parameters	<i>Suneela TJVD & Y Shen</i>
10:05 - 10:20	NISAR calibration in India during commissioning phase	<i>Shweta Sharma</i>
10:20-10:35	RCS target calibration	<i>Jaswant</i>
10:35 -10:50		Tea break
10:50-11:05	Recent deployment of CRs in Oklahoma, Alaska and Rosamond	<i>Ronald Muellerschoen</i>

11:05-11:20	Validation workflows for NISAR science measurement requirements	<i>Bruce Chapman</i>
11:20-11:35	Establishment of Core Cal/Val Sites Over India for NISAR Operational Products	<i>Anup & Dharmendra</i>
11:35-11:40	Break	
11:40-13:00	Sessions feedback and Concluding session	

Annexure A1

P11: Assessing the Performance of Radiometric Calibration of RISAT 1 Hybrid Polarimetric Data - Nibha Kumari
P12: Comprehensive Radiometric Analysis of EOS 04 C band SAR data over Homogenous Distributed Targets - K. Niharika
P13: NISAR-S Band Internal Calibration for Payload Health Monitoring - Alka Saini
P14: Analysis and Mitigation of Polarimetric Distortions in C band and L band Spaceborne and Airborne PolSAR Data Using Calibration Algorithms - Shashi Kumar
P15: Comparative study of point target response and radiometric calibration of SLC Ground range and Geo referenced products – Bhaskar Dubey

Annexure A2

P21: Gamma-0 over Amazon Rainforest Calibration site in multifrequency Space borne SAR-poster- Tanishka Gaur
P22: Vegetation Target for on orbit SAR data radiometric stability monitoring over Indian terrain – G.Meena Kumari
P23: Super Resolution SAR Tomography for Accurate Forest Height Mapping Using Spaceborne PolSAR Data - Shashi Kumar
P24: Design of Retro Directive Calibration Target Antenna for bi and multistatic SAR mission the Harmony case - Davide Giudici/ Beatrice Mai
P25: Quad band dual polarized low profile antenna for Multiband Active Radar Calibrator – Deepa Sharma

Annexure A3

P31: Vessel Detection and Velocity Estimation using Sentinel-1 and AIS data- Hamish Dsouza

P32: Calibration of UAV SAR Images Using Corner Reflectors Addressing Phase and Radiometric Inconsistencies- Somalin Nath

P33: Analyzing the resolution of SWOT altimetry for geodetic applications- DVP Krishna

P34: Performance evaluation of deployed corner reflectors in Antarctica for SAR radiometric calibration quality assessment – Shweta Sharma

P35: Soil Moisture Retrieval over different regions of India from Sentinel 1 SAR observations- Renju