



# SAR WGCV Workshop 2022

18–21 October 2022  
Canadian Space Agency

Workshop Program



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## The Program at a Glance

Tuesday Oct. 18
<b>Workshop Opening / Keynote</b>
Morning Break
<b>Session 1.1 - Calibration of Ongoing Missions</b>
Lunch
<b>Session 1.2 - Calibration and IQ Control Methodology and Techniques I</b>
Afternoon Break
<b>Session 1.3 Polarimetry / Compact Polarimetry</b>

Wednesday Oct. 19
<b>Session 2.1 Calibration of Future Missions</b>
Morning Break
<b>Session 2.2 - Calibration Targets I</b>
Lunch
<b>Session 2.3 ARD Format and Systems</b>
Afternoon Break
<b>Session 2.3 – ARD Format and Systems: Discussions</b>
<b>Social Event (no-host dinner): see page 10</b>

Thursday Oct. 20
<b>Session 3.1 Calibration and IQ Control Methodology and Techniques II</b>
Morning Break
<b>Session 3.2 - Calibration Targets II</b>
Lunch
<b>Session 3.3 SARCalNet</b>
Afternoon Break
<b>Visit of the John H. Chapman Space Centre</b>

Friday Oct. 21
<b>Session Summaries of presentation-only sessions</b>
Morning Break
<b>Summaries / Recommendations from ARD and SARCalNet sessions</b>
<b>Workshop Closeout</b>
Noon: Workshop ends

## Day 1 – Tuesday October 18, 2022, Morning

TIME	DUR.	TITLE / TOPIC	SPEAKERS, AUTHORS / FACILITATORS	ORG.
<b>8:30</b>	0:50	Arrival / Registration open		
<b>9:20</b>	0:30	Opening Remarks	<b>Bruce Chapman, Dirk Geudtner, Stephane Côté</b>	
<b>9:50</b>	0:30	The RADARSAT Program: Past, Present and Future	<b>Guennadi Kroupnik</b> (Exec. Director, Space Exploitation)	CSA
<b>10:20</b>	0:20	Break (next speakers: upload presentations for S1.1)		
		<b>S1.1 – Calibration of Ongoing Missions</b>	Chairs: Patrick Klenk (DLR), Takeshi Motohka (JAXA)	
<b>10:40</b>	0:20	Sentinel-1 Instruments Status, Product Performance and Evolutions	Antonio Valentino, Muriel Pinheiro, <b>Clément Albinet</b> , Guillaume Hajduch, Pauline Vincent, Andrea Recchia, Kersten Schmidt, Christoph Gisinger	ESA, RHEA for ESA, CLS, Aresys, DLR
<b>11:00</b>	0:20	TerraSAR-X / TanDEM-X Mission and Calibration Status with a Focus on Rainforest Acquisitions for LTSM	<b>Patrick Klenk</b> , Kersten Schmidt, Allan Bojarski, Markus Bachmann, Marco Schwerdt	DLR
<b>11:20</b>	0:20	RCM Image Quality and Calibration Status	<b>Mélanie Lapointe</b> , Stéphane Côté	CSA
<b>11:40</b>	0:20	RADARSAT-2 Image Quality and Calibration Update	<b>Dan Williams</b> , Yiman Wang, Gordon Fitzgerald, Neil Gibb, Janette Hiew, Ron Caves, Aurélien Fourmault	MDA
<b>12:00</b>	1:30	Lunch (next speakers: upload presentations for S1.2 from 13:10 to 13:30)		

## Day 1 – Tuesday October 18, 2022, Afternoon

TIME	DUR.	TITLE / TOPIC	SPEAKERS, AUTHORS / FACILITATORS	ORG.
13:30	0:20	SAOCOM Constellation Cal-Val Monitoring	Marc Thibault, <b>Matias Palomeque</b> , Joaquín Ferreyra, Alon Wenguierko	CONAE
		<b>S1.2 Calibration and IQ Control Methodology and Techniques I</b>	Chairs: Dirk Geudtner (ESA), Dan Williams (MDA)	
13:50	0:20	SAR-Only Operative Soil Moisture Product	<b>Marc Thibault</b> , Mario Acuña, Juan Manuel Cáceres, Rodrigo Edrosa, Ignacio Pascual	CONAE
14:10	0:20	Calibration and Validation of Ocean Surface Radial Velocity Products for RADARSAT-2 Using Along Track Interferometry and Doppler Centroid Anomaly Methods	<b>Usman Iqbal Ahmed</b> , Bernhard Rabus, Dirk Geudtner, Christoph Gierull	SFU, ESA, DRDC-DND
14:30	0:20	Automated System Performance Monitoring and Calibration of Capella SAR Satellites	<b>Jaki De Vos</b> , Matt Morgan, Craig Stringham, Jordan Heemskerk, Michael Duersch, Jim Klucar, Nestor Yague, Gordon Farquharson, Davide Castelletti	Capella Space
14:50	0:20	Automated Quality Control System for Capella SAR Satellite Image	<b>Jordan Heemskerk</b> , Craig Stringham, Michael Duersch, Jaki De Vos, Matt Morgan, Jim Klucar, Nestor Yague, Gordon Farquharson, Davide Castelletti	Capella Space
15:10	0:20	Break (next speakers: upload presentations for S1.3)		
15:30	0:20	C-band RFI Contamination Monitoring and Operational Mitigation in Sentinel-1 Products	Andrea Recchia, Niccolò Franceschi, Riccardo Piantanida, Guillaume Hajduch, Muriel Pinheiro, <b>Clément Albinet</b>	Aresys, CLS, ESA
		<b>S1.3 Polarimetry / Compact Polarimetry</b>	Chairs: Bernhard Rabus (SFU), Ridha Touzi (NRCan-CCRS)	
15:50	0:20	Cal/Val of RCM 3m Compact Polarimetry over the Sea	<b>Guy Seguin</b> , Paris W. Vachon	INSARS AT Inc.
16:10	0:20	Calibration of RCM Compact-Hybrid Modes	<b>Ridha Touzi</b> , Mélanie Lapointe, Mary-Anne Fobert, Stefan Nedelcu, Stéphane Côté	NRCan-CCRS, CSA
16:30		<b>End of Day 1</b>		

## Day 2 – Wednesday October 19, 2022, Morning

TIME	DUR.	TITLE / TOPIC	SPEAKERS, AUTHORS / FACILITATORS	ORG.
<b>9:00</b>	0:20	Arrival (next speakers: upload presentations for S2.1)		
		<b>S2.1 - Calibration of Future Missions</b>	Chairs: Bruce Chapman (JPL), Marcos Garcia Rodriguez (INTA)	
<b>9:20</b>	0:20	Status Update of ALOS-2/4 Calibration and Validation	<b>Takeshi Motohka</b> , Masato Ohki, Takeo Tadono, Osamu Isoguchi, Haruya Hirano	JAXA
<b>9:40</b>	0:20	Copernicus L-band SAR Mission ROSE-L – Mission Status and Science Plan	<b>Julia Kubanek</b> , Malcolm Davidson, Lorenzo Iannini, Dirk Geudtner, Robert Furnell, Clément Albinet, Muriel Pinheiro, Antonio Valentino	ESA
<b>10:00</b>	0:20	Sentinel-1C/-1D Performance Improvements and Calibration	<b>Dirk Geudtner</b> , Ignacio Navas Traver, Mario Martin Azcueta, Stefan Graham, David Bibby, Mario Cossu, Jelle Poupaert, Ramon Torres	ESA
<b>10:20</b>	0:20	PRECURSOR – ECO: SAR Mission Based on Collaborative Small Satellites	<b>Marcos Garcia Rodriguez</b> , Juan Manuel Cuerda Muñoz, Eva Maria Vega Carrasco, Nuria Alfaro Llorente	INTA
<b>10:40</b>	0:20	Break (next speakers: upload presentations for S2.2)		
		<b>S2.2 – Calibration Targets I</b>	Chairs: Klaus Weidenhaupt (DLR), Stéphane Côté (CSA)	
<b>11:00</b>	0:20	Upgrade and Re-Deployment of ESA Sentinel-1 Transponders	<b>Dirk Geudtner</b> , Mario Martin Azcueta, Bjorn Rommen, Ramon Torres	ESA
<b>11:20</b>	0:20	New Generation of DLR Transponders with Dual-band Frequency Capabilities for Multi-mission SAR Calibration	<b>Klaus Weidenhaupt</b> , Anna Maria Büchner, Sebastian Raab, Jens Reimann, Matthias Jirousek, Marco Schwerdt	DLR
<b>11:40</b>	0:20	Determination of the RCS of Reference Targets with Low Uncertainty	<b>Jens Reimann</b> , Anna Maria Büchner, Sebastian Raab, Matthias Jirousek, Klaus Weidenhaupt, Marco Schwerdt	DLR
<b>12:00</b>	1:30	Lunch (next speakers: upload presentations for S2.3 from 13:10 to 13:30)		

## Day 2 – Wednesday October 19, 2022, Afternoon

TIME	DUR.	TITLE / TOPIC	SPEAKERS, AUTHORS / FACILITATORS	ORG.
		<b>S2.3 Analysis Ready Data Formats and Systems</b>	Chairs: Franz Meyer (ASF-University of Alaska Fairbanks), David Small (University of Zurich)	
<b>13:30</b>	0:20	CEOS SAR WGCV - Analysis Ready Data for SAR Backscatter	<b>David Small</b> , Clément Albinet	Univ. of Zurich Remote Sensing Laboratories, ESA
<b>13:50</b>	0:20	OPERA RTC-S1 Product, Algorithm, and Validation Approach	Gustavo H. X. Shiroma, <b>Franz Meyer</b> , Heresh Fattahi, Jon Rosario, Alex Lewandowski, Bruce Chapman, Seongsu Jeong, Jungkyo Jung, David Bekaert	JPL, ASF, MIT
<b>14:10</b>	0:20	CEOS Analysis Ready Data (ARD) Ocean Radar Backscatter (ORB)	<b>Clément Albinet</b> , Ake Rosenqvist, François Charbonneau, Guillaume Hajduch, John Truckenbrodt	ESA, soloEO for JAXA, CCMEQ, CLS, DLR
<b>14:30</b>	0:20	Cloud-native SAR Processing for Everyone	<b>Joseph H. Kennedy</b> , Jake Herrmann, Andrew Johnston, Heidi Kristenson, Thomas Andrew Logan, Franz Josef Meyer, Rebecca Miller, Jacquelyn Smale, Forrest Williams, Jiang Zhu	ASF, University of Alaska Fairbanks
<b>14:50</b>	0:20	ESA-DLR-NASA Collaboration around a Harmonised Sentinel-1 NRB ARD Product	<b>Clément Albinet</b> , Wade Albright, Jonas Eberle, Peter Friedl, Kirk Hogenson, Franz Meyer, Katrin Molch, Muriel Pinheiro, Achim Roth, John Truckenbrodt, Antonio Valentino, Anna Wendleder, David Bekaert	ESA, NASA-ASF, DLR, RHEA for ESA, JPL
<b>15:10</b>	0:20	Break		
<b>15:30</b>	0:15	ARD SAR Peer Review	<b>Bruce Chapman</b> , <b>Franz Meyer</b>	
<b>15:45</b>	1:00	ARD Workshop summary, and moderated discussion	<b>Clément Albinet</b> , <b>Franz Meyer</b>	
<b>16:45</b>		<b>End of Day 2</b>		
<b>19:00</b>		<b>Social Event (no-host dinner)</b>	See page 10	<b>Portovino Restaurant</b>

## Day 3 – Thursday October 20, 2022, Morning

TIME	DUR.	TITLE / TOPIC	SPEAKERS, AUTHORS / FACILITATORS	ORG.
<b>9:00</b>	0:20	Arrival (next speakers: upload presentations for S3.1)		
		<b>S3.1 Calibration and IQ Control Methodology and Techniques II</b>	Chairs: Marc Simard (JPL), Mélanie Lapointe (CSA)	
<b>9:20</b>	0:20	The SWOT Mission: Science Cal/Val Deployments in Estuarine Settings	<b>Marc Simard</b> , Pascal Matte	JPL, ECCC
<b>9:40</b>	0:20	Clutter-Based Calibration for Multi-Channel SAR Instruments	<b>Jan Paul Kroll</b> , Marwan Younis, Gerhard Krieger	DLR
<b>10:00</b>	0:20	Enhanced Resolution / Wide Swath SAR (ERWS) Architectures: Challenges for Calibration and Ambiguity Control	<b>Ron Saper</b> , Paris W. Vachon	Astrocom Associates
<b>10:20</b>	0:20	Break (next speakers: upload presentations for S3.2, S3.3)		
		<b>S3.2 Calibration Targets II</b>	Chairs: Shweta Sharma (ISRO), Juan Manuel Cuerda Muñoz (INTA)	
<b>10:40</b>	0:20	Completion of the Ka-Band Corner Reflector Deployment for SWOT Calibration/Validation	<b>Ronald Muellerschoen</b> , Curtis Chen, J. Toby Minear, Jack Bush	JPL, University of Colorado
<b>11:00</b>	0:20	The VerQuin Cal/Val Trihedral Corner Reflector	<b>Christian Walls</b> , William Funderburk	VerQuin Geodetic Engineering
<b>11:20</b>	0:20	Radiometric and Polarimetric Calibration Quality Assessment of Airborne S-band Data	<b>Shweta Sharma</b>	ISRO
		<b>S3.3 SARCalNet</b>	Chairs: Bruce Chapman (JPL), Jens Reimann (DLR)	
<b>11:40</b>	0:20	Evaluation of SARCalNet Requirements	Bruce Chapman, with SARCalNet Team	JPL
<b>12:00</b>	1:30	Lunch		

## Day 3 – Thursday October 20, 2022, Afternoon

TIME	DUR.	TITLE / TOPIC	SPEAKERS, AUTHORS / FACILITATORS	ORG.
13:30	0:20	INTA Contributions to SARCalNet	Nuria Casal Vázquez, <b>Juan Manuel Cuerda Muñoz</b> , Patricia Cifuentes Revenga	INTA
13:50	0:20	Requirements for Passive Targets for SAR Calibration Network	<b>Shweta Sharma</b>	ISRO
14:10	1:00	SARCalNet Discussion	<b>Bruce Chapman, all</b>	
15:10	0:20	Break		
15:30	1:00	Visit of the John H. Chapman Space Centre		
16:30		<b>End of Day 3</b>		

## Day 4 – Friday October 21, 2022, Morning

TIME	DUR.	TITLE / TOPIC	SPEAKERS, AUTHORS / FACILITATORS
		<b>Session Summaries</b>	<b>Session Chairs</b>
<b>9:20</b>	1:00	Summaries of presentation-only sessions: S1.1 Calibration Ongoing Missions S1.2 Calibration and IQ Control Methodology and Techniques I S1.3 Polarimetry / Compact Polarimetry S2.1 Calibration of Future Missions S2.2 Calibration Targets I S3.1 Calibration and IQ Control Methodology and Techniques II S3.2 Calibration Target II	
<b>10:20</b>	0:20	Break	
<b>10:40</b>	1:00	Summaries / Recommendations from: S2.3 ARD Formats and Systems S3.3 SARCalNet	
		<b>Workshop Closeout</b>	<b>Bruce Chapman, Dirk Geudtner</b>
<b>11:40</b>	0:20	- Pending AIs, topics - Hosting of next Workshop - Concluding Remarks	
<b>12:00</b>		<b>Close of Workshop</b>	

## Social Event – no host dinner, [Portovino](#) restaurant

SAR WGCV folks,

We have not seen each other at a social gathering in two years! For this overdue reunion, we propose the Portovino restaurant, adjacent to the [DIX30 district](#), the pinnacle of North-American suburbanism ☺.

Portovino is a bring-your-own-wine restaurant, and, ever efficient, the DIX30 district has one Quebec liquor board store (colloquially known by its acronym: SAQ) near the place!

The DIX30 has lots of stores and amenities for those who wish to wander in its ‘streets’ before of after the meal at Portovino.

**Time:** the plan is to all meet at the Portovino on **Wednesday Oct 19, at 19:00 (7:00pm)**. Upon arrival, mention “**Canadian Space Agency group**” to the host(s), they should lead you to where our group will be seated.

**Place:** Below is a local map showing the location of the PortoVino, and of course the SAQ wine store, which should in fact be your first stop... If you are driving, use your mobile to find the best route from your hotel.

SAQ store address: **7200 Du Quartier Boulevard, Brossard, QC J4Y 0B5**

Portovino address: **8940 Leduc Boulevard, Brossard, QC J4Y 0G4**



As a reference, here is the [itinerary to the DIX30 SAQ Liquor store, from the CSA](#).

## Current COVID Measures at the CSA

At the CSA, masks can be removed only when two-metre physical distancing can be maintained in a conference room.

Wearing a medical mask is required while circulating inside of the building and when it is difficult to maintain physical distancing (for example in elevators, entrances, hallways, stairwells and other common areas).

Masks are available at the CSA entrance.

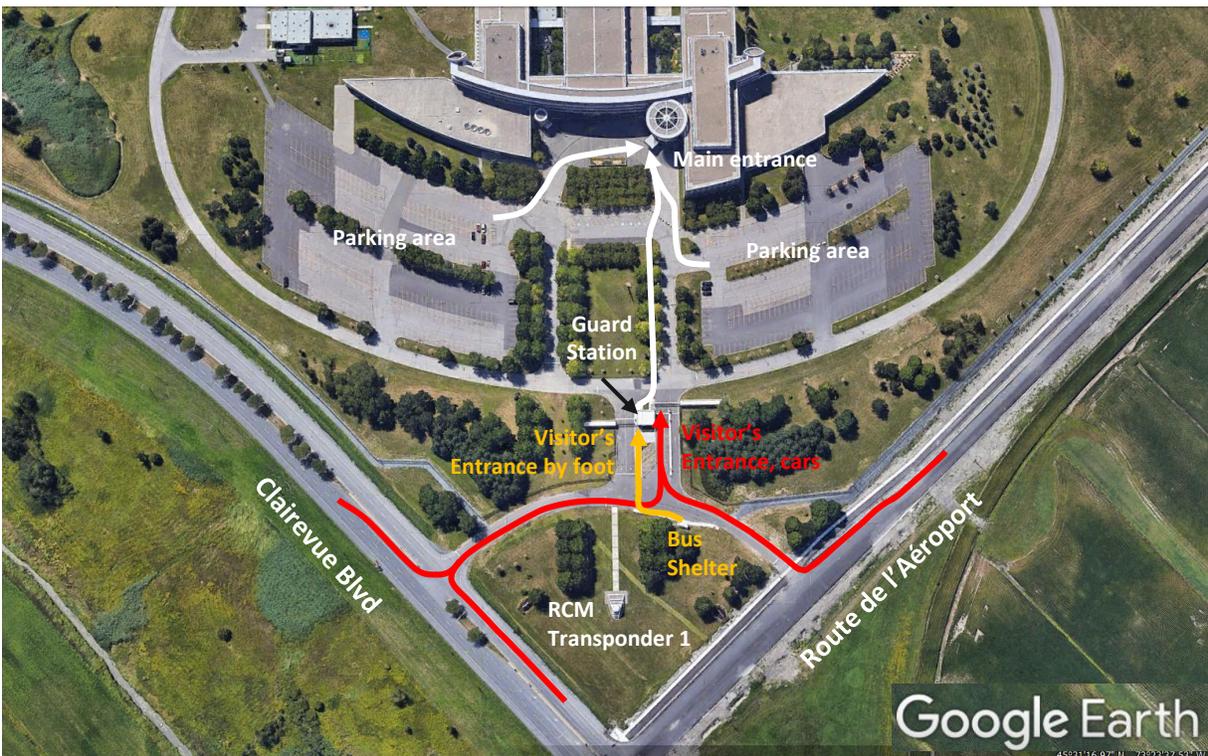
## Visiting the CSA

Please arrive on Tuesday October 18 no later than 8:45 am.

Every morning, upon arriving at the CSA headquarters:

- **If you are coming by bus:** Proceed to the visitor's entrance by foot (yellow), and tell the guard that you are a participant to the CEOS SAR Workshop. You will need a photo ID to access the premises.
- **If you are coming by car or taxi/ride share service:** Proceed to the visitor's entrance by car (red) using the left lane, and tell the guards that the passengers of the vehicle are participants to the CEOS SAR Workshop. Each passenger will need a photo ID to access the site. If coming by car, you will be directed to a parking lot area.

Then proceed to the main entrance. Inside the Rotunda, you will be directed to the CEOS SAR WGCV Workshop registration table. At this point, **passport will be required for foreign nationals.**



## Wifi Access at the CSA Conference Centre

SSID: **CSA-Conference**

Password: **CSA-Conference**

The above credentials are case sensitive, so please ensure that the characters in red are capitalized.