

GNSS Remote Sensing Colloquium 2023

Day	Time	Title	Speaker
Monday June 5	8:30-8:45	Welcome	
(Overview)	8:45-9:45	GNSS remote sensing: Innovative Earth observations with big prospects	Jens Wickert
CG1 Center Auditorium	9:45-10:00	Photos/Break/Informal Discussion	
	10:00-11:00	Physics of atmospheric microwave propagation	Sergey Sokolovskiy
	11:00-12:00	Introduction of GNSS systems and signals	Jan Weiss
	12:00-2:00	Working Lunch/Break/Informal Discussion	
	2:00-3:00	GNSS theory, observation equation, and error sources	Penina Axelrad
	3:00-3:20	Break/Informal Discussion	
	3:20-5:00	Lab exercise: CDAAC website and products	Maggie Sleziak
Tuesday June 6	8:30-9:30	GNSS RO & GNSS-R receivers and signal tracking	Tom Meehan
(Ground-based GNSS)	9:30-10:30	GNSS observation network and data/data centers	Glen Mattioli
CG1 Center Auditorium	10:30-10:50	Break/Informal Discussion	
	10:50-11:50	Ground-based GNSS atmospheric sensing	John Braun
	11:50-2:00	Working Lunch/Break/Informal Discussion	
	2:00-3:00	Ground-based GNSS ionospheric sensing	Anthea Coster
	3:00-3:20	Break/Informal Discussion	
	3:20-5:00	Lab exercise: Using Python to fetch and read netCDF data	Hannah Huelsing
Wednesday June 7	8:30-9:30	Introduction of GNSS radio occultation (RO)	Shu-Ya Chen
(Radio Occultation I)	9:30-10:30	RO inversions I - excess phase	Douglas Hunt
CG1 Center Auditorium	10:30-10:50	Break/Informal Discussion	
	10:50-11:50	RO neutral atmospheric inversions II - bending angle and refractivity	Zhen Zeng
	11:50-2:00	Working Lunch/Break/Informal Discussion	
	2:00-3:00	RO neutral atmospheric inversions III - atmospheric parameters	Tae-Kwon Wee
	3:00-3:20	Break/Informal Discussion	
	3:20-5:00	Lab exercise: Using Python to analyze CDAAC neutral atm products	Jeremiah Sjoberg
Thursday June 8	8:30-9:30	Sensing the ionosphere with GNSS RO (measurement and inversion)	Charles Lin
(Radio Occultation II)	9:30-10:30	Accuracy assessment of ionospheric RO retrievals	Min-Yang Chou
CG1 Center Auditorium	10:30-10:50	Break/Informal Discussion	
	10:50-11:50	Study of ionospheric scintillation using GNSS measurements	Irina Zakharenkova
	11:50-1:20	Working Lunch/Break/Informal Discussion	
	1:20-3:15	Student Presentations (3min/person)	
	3:15-3:30	Break/Informal Discussion	
	3:30-5:00	Lab exercise: Using Python to analyze CDAAC ionosphere products	Iurii Cherniak Irina Zakharenkova John Braun

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Day	Time	Title	Speaker
Friday June 9	8:30-9:30	Introduction of GNSS reflectometry (GNSS-R)	Christopher Ruf
(GNSS-R)	9:30-10:30	GNSS-R ocean winds	James Garrison
CG1 Center Auditorium	10:30-10:50	Break/Informal Discussion	
	10:50-11:50	Soil moisture monitoring using GNSS-R data	Xiaolan Xu
	11:50-2:00	Working Lunch/Break/Informal Discussion	
	2:00-3:00	GNSS-R altimetry	Jade Morton, Yang Wang
	3:00-3:20	Break/Informal Discussion	
	3:20-4:30	Lab exercise: release of lab practices (sub-groups): 1. Studies of tropopause or PBL using RO data; 2. RO data assimilation; 3. Studies of ionosphere using RO data; 4. RO climate data record; 5. GNSS-R data applications	1. Zhen Zeng 2. Hailing Zhang, William Kuo 3. Iurii Cherniak/Irina Zakharenkova/John Braun 4. Jeremiah Sjoberg 5. Yang Wang
	5:00-7:00	Reception - NCAR Mesa Lab Lobby/Mezzanine	
Weekend			
Monday June 12	8:30-9:30	Large- and small-scale thermal variability derived from RO data	William Randel
(Science Applications I)	9:30-10:30	PBL detection using RO data	Chi Ao
FL2-1022 Large Auditorium	10:30-10:50	Break/Informal Discussion	
	10:50-11:50	Atmospheric river study using RO	Jennifer Hasse
	11:50-1:30	Working Lunch/Break/Informal Discussion	
	1:30-2:30	Climate monitoring using RO	Andrea Steiner
	2:30-3:30	Using GNSS RO data to validate & calibrate other datasets	Shu-Peng Ho
	3:30-3:45	Break/Informal Discussion	
	3:45-5:00	Lab exercise in FL2 breakout spaces	
Tuesday June 13	8:30-9:30	Studies of ionospheric structures, variabilities and dynamics using ionospheric RO data	Charles Lin
(Science Applications II)	9:30-10:30	Study of atmosphere-ionosphere coupling using GNSS data	Nick Pedatella
FL2-1022 Large Auditorium	10:30-10:50	Break/Informal Discussion	
	10:50-11:50	Ionospheric assimilation of RO and ground-based GNSS data	Tomoko Matsuo
	11:50-1:30	Working Lunch/Break/Informal discussion	
	1:30-2:30	GNSS RO data in supporting NOAA SWPC's space weather operational needs	Tzu-Wei Fang
	2:30-3:30	Polarimetric GNSS RO technique to sense heavy precipitation	Estel Cardellach
	3:30-3:45	Break/Informal Discussion	
	3:45-5:00	Lab exercise in FL2 breakout spaces	

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Day	Time	Title	Speaker
Wednesday June 14	8:30-9:30	Overview of data assimilation	Hui Shao
(Data Assimilation)	9:30-10:30	Errors in RO retrievals	Jeremiah Sjoberg
FL2-1022 Large Auditorium	10:30-10:50	Break/Informal discussion	
	10:50-11:50	Assimilation and impact of RO observations	Sean Healy
	11:50-2:00	Working Lunch/Break/Informal discussion	
	2:00-3:00	Assimilation and impact of RO observations on cyclone prediction	William Kuo
	3:00-3:20	Break/Informal discussion	
	3:20-5:00	Lab exercise in FL2 breakout spaces	
Thursday June 15	8:30-9:30	Challenges in RO measurements	Chi Ao
(Challenges & Future Developments)	9:30-10:30	TBD	Robert Kursinski
FL2-1022 Large Auditorium	10:30-10:50	Break/Informal discussion	
	10:50-11:50	Opportunities and challenges in GNSS-R	Mehmet Kurum
	11:50-2:00	Working Lunch/Break/Informal discussion	
	2:00-3:00	GNSS remote sensing: current status and future perspective	Estel Cardellach
	3:00-3:20	Break/Informal discussion	
	3:20-5:00	Lab exercise in FL2 breakout spaces	
Friday June 16	8:30-10:30	Student presentations (3 groups, 40min/group)	
(Student Presentations)	10:30-10:50	Break/Informal discussions	
FL2-1022 Large Auditorium	10:50-12:10	Student presentations (2 groups)	
	12:10-2:00	Working Lunch	
	2:00-	Extended discussions of challenges/opportunities/research directions	