



The 8th International IEEE Conference on Microwaves, Communications, Antennas, Biomedical Engineering and Electronic Systems (COMCAS)

SPECIAL SESSION – CELLular ENVIRONMENT MONITORING (CELLENMON)

Wednesday, Nov. 3rd, 2021

David Intercontinental Hotel, Royal J Hall

[Register Here](#) (Hebrew)

Program

09:00 – 09:20

Opening Remarks

Prof. Pinhas Alpert, Prof. Vojtech Bares

09:20 – 10:50

Session: Empirical Rain Monitoring with CMLs

Chair: Prof. Remko Uijlenhoet

- *Tropical CML Rainfall Monitoring in Sri Lanka*
Aart Overeem (Royal Netherlands Meteorological Institute & Delft University of Technology, The Netherlands), Hidde Leijnse, Thomas Van Leth, Linda Bogerd, Jan Priebe, Daniele Tricario, Arjan Droste, Remko Uijlenhoet
- *Country-wide Rainfall Estimation with CMLs and via a Combination of CMLs and Weather Radar: Recent Achievement and Upcoming Challenges in Germany*
Christian Chwala (Institute of Meteorology and Climate Research, Karlsruhe Institute of Technology, Campus Alpin, Garmisch-Partenkirchen, Germany), Maximilian Graf, Julius Polz, Luca Glawion, Sebastian Rothermel, Tanja Winterrath, Gerhard Smiatek, Harald Kunstmann
- *Measuring Tropical Rainfall with a Dense Commercial Microwave Link Network in Nigeria*
Arjan Droste (Wageningen University & Research, The Netherlands), Aart Overeem, Jan Priebe, Daniele Tricario, Linda Bogerd, Hidde Leijnse, Remko Uijlenhoet
- *Hydrological Applications of Microwave Links in Mountain and Peri-urban Catchments: A Case Study in Italy*
Greta Cazzaniga (Politecnico di Milano, Italy), Carlo De Michele, Michele D'Amico, Cristina Deidda, Roberto Nebuloni
- *The First Platform of Rainfall Estimation Using Microwave Links in China*
Xichuan Liu (National University of Defense Technology, China)

10:50 – 11:10

Coffee Break

11:10 – 13:00

Poster Session + Short 5-minute Introduction Talks

Chair: Dr. Jonatan Ostrometzky

- *Dissimilarity of Rainfall Information Retrieved from Collocated Commercial Microwave Links*
Anna Špačková (Czech Technical University in Prague, Czech Republic), Martin Fencel, Vojtech Bares
- *Cross Environmental Monitoring Using StarGAN*
Sergey Timinsky (Tel Aviv University, Israel), Hagit Messer, Jonatan Ostrometzky
- *Urban Moisture Based on CML Data and Relation to Land-cover – Case of Tel-Aviv Metropolitan Area*
Yoav Rubin (Tel Aviv University, Israel), Pinhas Alpert
- *Precipitation Estimation from Short Commercial Microwave Links in an Urban Environment*
Roy Janco (Tel Aviv University, Israel), Hagit Messer, Jonatan Ostrometzky
- *A Comparative Study of 2-D Non-parametric B-Splines Field Estimation Based on Point and Line Projection Sensors*
Shay Sagiv (Tel Aviv University, Israel), Hagit Messer
- *Study on the Superiority of Commercial Microwave Link Network for Rainfall Monitoring*
Xin Zheng (Hohai University, China), Qian Wang, Hagit Messer, Tao Yang
- *Rainfall Estimates from Personal Weather Station and Commercial Microwave Link Data in Germany*
Maximilian Graf (Institute of Meteorology and Climate Research, Karlsruhe Institute of Technology, Campus Alpin, Garmisch-Partenkirchen, Germany), Abbas El Hachem, Micha Eisele, Jochen Seidel, Christian Chwala, Harald Kunstmann, András Bárdossy
- *Deep Learning Method for Rainfall Prediction Using Satellite Links Attenuation*
Gil Rafalovich (Tel Aviv University, Israel), Hagit Messer, Jonatan Ostrometzky
- *Anomalies in CML Attenuation Data – Discussing Machine Learning Based Detection Strategies and Their Benefit for Rainfall Estimation*
Julius Polz (Institute of Meteorology and Climate Research, Karlsruhe Institute of Technology, Campus Alpin, Garmisch-Partenkirchen, Germany), Luca Glawion, Maximilian Graf, Christian Chwala, Harald Kunstmann
- *Demonstrating the Value of CML Derived Rainfall Data for Climate Resilience Services*
Jan Priebe (GSMA)
- *Precipitation Estimates from Microwave Links for Urban Hydrology: Improving the Accuracy Using Wet Antenna Calibration*
Jaroslav Pastorek (Czech Technical University in Prague, Czech Republic), Martin Fencel, Joerg Rieckermann, Vojtech Bares

13:00 – 14:20

Lunch

14:20 – 15:35

Session: CMLs for Other Than Rain Monitoring

Chair: Prof. Pinhas Alpert

- *Commercial Microwave Links as a Measurement Tool for High Resolution Humidity Observation – An Overall Review of Recent Applications*
Pinhas Alpert (Tel Aviv University, Israel), Yoav Rubin
- *Estimating Water Vapor Density from an E-band Microwave Link*
Martin Fencel (Czech Technical University in Prague, Czech Republic), Vojtech Bares
- *The Effect of Bird Flocks on Commercial Microwave Links*
Daniel Ben Moshe (Tel Aviv University, Israel), Hagit Messer
- *Investigations on Radome Wetness Using Monostatic Field Experiment*
Jonas F Tiede (Technical University of Munich, Germany), Uwe Siart, Nico Blettner, Harald Kunstmann, Christian Chwala

15:35 – 17:05

Session: CMLs and Signal Processing

Chair: Prof. Hagit Messer

- *Advantages in Line Projection Rain Retrieval – A Review of Relevant Studies*
Hagit Messer (Tel Aviv University, Israel)
- *Statistical Spatial Characterization of Rainfall Fields by Measurements from Commercial Microwave Links*
Adam Eshel (Tel Aviv University, Israel), Pinhas Alpert, Hagit Messer
- *Performance Evaluation of Intensity Estimation After Detection and its Application on Accumulated Rain Estimation from Attenuation Level of Signals from Commercial Microwave Links*
Taeer Weiss (Tel Aviv University, Israel), Hagit Messer, Tirza Routtenberg
- *Combining Commercial Microwave Link and Rain Gauge Observations to Estimate Countrywide Precipitation: A Stochastic Reconstruction and Pattern Analysis Approach*
Nico Blettner (University of Augsburg, Germany), Christian Chwala, Barbara Haese, Sebastian Hörning, Harald Kunstmann
- *Adaptive Models for the Attenuation Times Series Forecasting*
Dror Jacoby (Tel Aviv University, Israel), Jonatan Ostrometzky, Hagit Messer
- *RainGAN: A Conditional Rain Fields Generator*
Hai Victor Habi (Tel Aviv University, Israel), Hagit Messer

17:05 – 17:30

Closing Discussion

The CELLENMON Special Session is organized by Prof. Hagit Messer, Prof. Pinhas Alpert, and Dr. Jonathan Ostrometzky from Tel Aviv University.

For more information please contact adameshel@mail.tau.ac.il