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

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 Tricarico, 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 Fencl, Vojtech Bares

- *Cross Environmental Monitoing 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 Fencl, 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 Fencl (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

Interactive Panel: Industry and Academia

Introduction Talk: RADAR and CML QPE: How Can They Benefit From Each Other?
Elyakom Vadislavsky (The Israeli Meteorological Service), Eyal Amitai, Yoav Levi

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

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