

2026 IEEE International Symposium on Spectrum Innovation (DySPAN 2026)

**Washington, District of Columbia, USA
11-14 May 2026**

IEEE Catalog Number:
ISBN:

CFP26NFD-POD
979-8-3315-4988-6



Copyright © 2026, IEEE

All Rights Reserved

Copyright and Reprint Permissions:

Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	CFP26NFD-POD
ISBN (Print-On-Demand):	979-8-3315-4988-6
ISBN (Online):	979-8-3315-4987-9
ISSN:	2334-3125

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA

Phone:	(845) 758-0400
Fax:	(845) 758-2633
E-mail:	curran@proceedings.com
Web:	www.proceedings.com

TABLE OF CONTENTS

Variational Bayesian Spectrum Sensing over AFDM Waveforms in Doubly-Dispersive Channels	1
<i>Anoop A, Christo Kurisummootil Thomas, Bibal Benifa J V, Kala S</i>	
Resource Allocations for Fluid Antenna-Enabled Cell-Free MIMO Networks	8
<i>Khushnub Anwar, Imtiaz Ahmed, Zoheb Hassan, Mohammad Abdul Matin, Md Sahabul Alam Kamrul Hasan</i>	
Joint QoS-Aware Satellite Selection and Interference Mitigation for Dynamic Spectrum Sharing in Multi-Layer NTN's	12
<i>Asahi Oi, Takeo Fujii, Kohei Yoshida, Masayuki Ariyoshi</i>	
6 GHz Band Sharing Real-world Experimental Investigation Results and Recommendations	14
<i>Jay Herman, Tim Godfrey, John M Beck, David Hattey, Muhammad I. Rochman, Monisha Ghosh Tom Willis, Arupjyoti Bhuyan</i>	
Practical Attacks on AFC Clients in Wi-Fi Access Points	24
<i>Yilu Dong, Tianchang Yang, Nathaniel Bennett, Arupjyoti Bhtivan, Syed Rafiul Hussain</i>	
Evaluating Smartphone GNSS Accuracy for Geofenced 6 GHz Operations	28
<i>Joshua Roy Palathinkal, Hardani Ismu Nabil, Muhammad Iqbal Rochman, Hossein Nasiri, Francis A. Gatsi Monisha Ghosh</i>	
Interference Analysis of 5G NR and Wi-Fi 6E in the 6 GHz Band	34
<i>Zoe Benn, Angela Doufexi, Mark Beach</i>	
Digitally Aided RF-Domain Blocker Suppression for Spectrum-Sharing Receivers Using an RFSoc	40
<i>Francesco Raimondo, Stephen Wales, Andrew C. M. Austin, Geoffrey Hilton, Mark A. Beach</i>	
Experimental Evaluation of Reinforcement Learning for Spectrum Sharing on a Real-Time LoRa Testbed	44
<i>Xin Yao, Xi Wang, Haoze Zhang, Mingyue Ji</i>	
Efficient Spectrum Allocation in Radio Dynamic Zones with Spectrum Occupancy Predictions	52
<i>Aarushi Sarbhai, Sneha Kasera, Aditya Bhaskara</i>	
Multi-Year Spectral Structure of 6G Candidate Bands at 2.7 GHz and 4.4 GHz	60
<i>Amir Hossein Fahim Raouf, İsmail Güvenç</i>	
AI-enabled Real-time Sensing Using 5G Base Stations for Dynamic Spectrum Sharing	68
<i>Silvia Ionescu, Amanda Maas, David Li, Harish Ramchandran</i>	
A Transformer Network for End-to-End Detection and Classification of Wideband RF Signals	75
<i>Adela Vagollari, Shrutika S. Sawant, Sahana Raghunandan, Wolfgang Gerstacker</i>	
When Semantic Communication Meets Queueing: Cross-Layer Latency and Task Fidelity Optimization	81
<i>Yalin E. Sagduyu, Tugba Erpek</i>	
Jamming-Resilient PRB Reservation for Latency-Critical O-RAN Network Slicing	87
<i>Elahe Delavari, Junaid Farooq</i>	
Anomaly Detection for RF Signals using Ellipsoidal Deep One Class Classification	93
<i>Declan Rymer, William Christopher Headley, Joseph D. Gaeddert</i>	

Copyright Protection for RF Fingerprinting Spectrum Datasets with Robust Watermarking	99
<i>Yiting Wang, Tianya Zhao, Xuyu Wang</i>	
Comparative Characterization of 5G NR Link Performance in Sub-6 GHz and Sub-THz Bands	105
<i>Connor R. McPeak, Cole Bednar, Daniel J. Jakubisin</i>	
Low-Complexity Resource Allocation for Multi-Operator Private 5G Networks via Lexicographic Optimization	112
<i>Ryo Kato, Takeo Fujii</i>	
Minimum Separation Distances for Local 5G/6G Networks in the 3.8-4.2 GHz Frequency Band	120
<i>Thilina Weththasinghe, Arturo Basaure, Thushan Sivalingam, Dileepa Marasinghe, Nuwanthika Rajapaksha Marja Matinmikko-Blue</i>	
Modeling Microwave Radiometer Sensing Performance as a Function of Spectrum Use	128
<i>Nicholas Brendle, Jonathan Chamberlain, Joel T. Johnson, David Starobinski</i>	
Radar Detection via RLS Adaptive Filter Residuals for Cellular Coexistence	138
<i>Mehmetcan Gok, Danijela Cabric, Michael L. Honig</i>	
Spatially Distributed Beacon Signaling for Managing Interference to a Primary Incumbent	148
<i>Swaroop Gopalam, Randall A. Berry, Dongning Guo, Michael L. Honig</i>	
SPEAR-BF: Wideband Multi-Channel D-Band Beamformer based on the RFSoc Platform	156
<i>Wei Cheng, Zhihui Gao, Jose Guajardo, Hesham Beshary, Yiran Chen, Ali M. Niknejad, Tingjun Chen</i>	
Physics-grounded Mechanism Design for Spectrum Sharing between Passive and Active Users	164
<i>Jiguang Yu, Nicholas Brendle, Joel T. Johnson, David Starobinski</i>	
Detecting Radio Frequency Interference in W-Band Passive LEO Systems: Analysis of Emerging Challenges and Strategic Imperatives	172
<i>Pouyan Amirshahi, Paul Ransom, Charles Cooper</i>	
Modeling and Mitigation of 7.125-7.40 GHz Terrestrial Network RFI on the Passive Earth Exploration Satellite Service in 6.725-7.125 GHz Band	179
<i>Md Toufiqur Rahman, Hariharan Venkat, Chung-Tse Michael Wu, Ivan Seskar, Narayan B. Mandayam</i>	
COSMOS ZMS: A Radio Dynamic Zone Management System Using the COSMOS Platform	188
<i>Carlos E. Caicedo Bastidas, Jay Nilesh Doshi, Malobika Roy Choudhury, Akshay K. Hulyar Prabhakara Abhishek Adhikari, Kevin Hermstein, Abhishek Kumar Singh, Tingjun Chen, Kyle Jamieson, Fred Moshary Ivan Seskar, Dipankar Raychaudhuri, Gil Zussman</i>	
Parameter-Efficient Channel Prediction in LEO Massive MIMO Using Dendritic Neural Networks	195
<i>Ashlee Rice-Bladykas, Janise McNair</i>	
Beyond Path Loss: Altitude-Dependent Spectral Structure Modeling for UAV Measurements	203
<i>Amir Hossein Fahim Raouf, İsmail Güvenç</i>	
Site-Specific and Frequency-Dependent Channel Characterization and MIMO Performance in FR3	211
<i>Zhuangzhuang Cui, Rudranil Chattopadhyay, Emiel Vanspranghels, Sofie Pollin</i>	
PropSplat: Map-Free RF Field Reconstruction via 3D Gaussian Propagation Splatting	221
<i>William Bjorndahl, Maninder Pal Singh, Farhad Nouri, Joseph Camp</i>	

Robust Pathloss Radio Map Prediction via Physics-Informed Transformer	229
<i>Zihao Liang, Cong Shen</i>	
RISE: Real-time Image Processing for Spectral Energy Detection and Localization	237
<i>Chung-Hsuan Tung, Zhenzhou Qi, Tingjun Chen</i>	
Direction-Aware Indoor–Outdoor Detection Using ADS-B Signals of Opportunity	247
<i>Lichen Wang, Honglin Xu, Ali Abedi</i>	
Reproducibility in Spectrum Research: A Platform for Open Data, Shared Code, and Competitive Benchmarking	257
<i>Sarah Tanveer, Gianna McLeod, Anant Sahai, Ali Abedi</i>	
Large Spectrum Models (LSMs): Decoder-Only Transformer-Powered Spectrum Activity Forecasting via Tokenized RF Data	267
<i>Mohammad Mosiur Lunar, Mehmet C. Vuran</i>	
SliceFed: Federated Constrained Multi-Agent DRL for Dynamic Spectrum Slicing in 6G	277
<i>Hossein Mohammadi, Seyed Bagher Hashemi Natanzi, Ramak Nassiri, Jamshid Hassanpour, Bo Tang Vuk Marojevic</i>	
A Two-Stage 5G NR ISAC Framework for Coarse-to-Fine UAV Detection and Tracking	286
<i>Wahab Khawaja, Ahmed Manavi Alam, Ali C. Gurbuz</i>	
Tiny-Twin: A CPU-Native Full-stack Digital Twin for NextG Cellular Networks	294
<i>Ali Mamaghani, Ushasi Ghosh, Srinivas Shakkottai, Dinesh Bharadia, Ish Kumar Jain</i>	
DRASTIC: A Dynamic Resource Allocation Framework over 6G Network Slicing in Task-aware Closed-Loop Tactile Internet Applications	302
<i>Narges Golmohammadi, Madan Mohan Rayguru, Sabur Baidya</i>	
Measurement of Satellite Emissions in the 1400 MHz to 1427 MHz Radio Astronomy Protected Band	310
<i>Daniel Sheen, Samuel Thé, Frank D. Lind</i>	
Limiting Mutual Interference Between NGSO Satellite Constellations via Probabilistic Look Aside	318
<i>Ganghui Lin, Jon M. Peha, Marvin Sirbu, Alex Hills</i>	
Revisiting TVWS for Rural Broadband: Policy Insights from Nationwide Availability Analysis and ARA Field Validation	328
<i>Mukaram Shahid, Taimoor Ul Islam, Kunal Das, Sarath Babu, Daji Qiao, Arsalan Ahmad, Jimming Song Zhengyuan Zhu, Yong Guan, Tusher Chakraborty, Suraj Jog, Ranveer Chandra, Hongwei Zhang</i>	
Spectrum & RAN Sharing: A Measurement-based Case Study of Commercial 5G Networks in Spain	337
<i>Rostand A. K. Fezeu, Lilian Coelho de Freitas, Eman Ramadan, Jason Carpenter, Claudio Fiandrino Joerg Widmer, Zhi-Li Zhang</i>	
PRB-RUPFormer: A Recursive Unified Probabilistic Transformer for Residual PRB Forecasting	345
<i>Saad Masrur, Yuxuan Jiang, Matti Hiltunen, Ajay Rajkumar, İsmail Güvenç</i>	
Sensing and Stopping Interfering Secondary Users: Validation of an Efficient Spectrum Sharing System	353
<i>Meles G. Weldegebriel, Zihan Li, Dustin Maas, Gregory Hellbourg, Ning Zhang, Neal Patwari</i>	
Analysis and Optimization of 5G Random Access for Massive Handover with Spectrum Sharing	363
<i>Kangle Mu, Zongyun Xie, Igor Kadota, Randall Berry</i>	

Satellite-Terrestrial Spectrum Sharing in FR3 through QoS-Aware Power Control and Spatial Nulling	373
<i>Maria Tsampazi, Paolo Testolina, Michele Polese, Tommaso Melodia</i>	
zkSAS: Practical Zero-Knowledge Proofs for Verifiable Spectrum Access Management	383
<i>Nishat F. Purbasha, Ifteher Alom, Eric W. Burger, Y. Thomas Hou, Wenjing Lou, Yang Xiao</i>	
Protecting Human Activity Signatures in Compressed IEEE 802.11 CSI Feedback	393
<i>Mohamed Seif, Atsutse Kludze, Yasaman Ghasempour, H. Vincent Poor, Doru Calin, Andrea J. Goldsmith</i>	
Wi-PRO: Accurate Indoor PNT using FTM with Multipath Suppression	401
<i>William Hunter, Roshan Ayyalasomayajula, Dinesh Bharadia</i>	
Regulatory-Aware Synthetic Spectrum Generation for LoRa and IEEE 802.15.4g Coexistence	410
<i>Ife Olalekan Ebo, Idowu Ajayi, Lina Mroueh, Youmni Ziade</i>	
GAD-Autoformer: Gated Adaptive Decomposition for Long-Horizon Federal Incumbent Spectrum Prediction	418
<i>Yanyu Hu, Imtiaz Nasim, Vivek Agarwal, Arupjyoti Bhuyan, Mingyue Ji</i>	
Interference-Aware Rate Adaptation via Q-Learning for 5G–Naval Radar Coexistence in the CBRS Band	426
<i>Syed Ayaz Mahmud, Shamik Sarkar, Sneha K. Kasera</i>	
M-SHarC: Multi-Spectral Harmonic Characterization and Classification	436
<i>Blessing Okoro, Vaasu Taneja, Clark Mattoon, Xin Li, Mariya Zheleva</i>	
TITAN: A Tiny Trained Approximation Network for Synchronization in Multi-RAT Systems	446
<i>Pushpalatha Murthy, Oshadhi Piyumi Rajapakshe, Dola Saha, Asaf Tzadok</i>	
Wi-Fi Self-Coexistence in the 6 GHz Band: An ns-3 Evaluation of LPI and SP Usage	454
<i>Hossein Nasiri, Seda Dogan-Tusha, Francis A. Gatsi, Monisha Ghosh</i>	
Optimal Contract Design for Dynamic Sharing of Infrastructure and Spectrum	462
<i>Zongyun Xie, Randall A. Berry</i>	
Peering in Space: A Spectrum Sharing Perspective	470
<i>Anindo Mahmood, Sk Samiul Reza, Murat Yuksel</i>	
Techno-Economic Evaluation of UAV-Assisted RAN Deployments over 5G NR Bands	478
<i>Zaheen E Muktadi Syed, Mustafa Tarik Sanic, Murat Yuksel</i>	
Interference Resilient Alamouti (De)Coding	486
<i>Spyridon Peppas, Nicholas D. Sidiropoulos</i>	
Towards Realistic Waveform-Level IoT Network Simulation via IQ Mixing	491
<i>Alexis Delplace, Samer Lahoud, Kinda Khawam, Dominique Quadri</i>	
Frequency-Adaptive Multi-Band Architecture for Upper Mid-Band MIMO Systems	496
<i>Emiel Vanspranghels, Zhuangzhuang Cui, Sofie Pollin</i>	
Evaluation of Mobile-Satellite Direct-to-Device Uplink Interference on GPS L1 Reception	501
<i>Yankai Peng, J. Nicholas Laneman</i>	