Peijin
Zhang
New Jersey Institute of Technology, Center for Solar-Terrestrial Research
Bin Chen, New Jersey Institute of Technology, Center for Solar-Terrestrial Research
Sijie Yu, New Jersey Institute of Technology, Center for Solar-Terrestrial Research
Anastasia Kuske, New Jersey Institute of Technology, Center for Solar-Terrestrial Research
Oral
Low-frequency solar radio observations provide key diagnostics of particle acceleration and plasma processes in the solar corona. The Owens Valley Radio Observatory Long Wavelength Array (OVRO-LWA) continuously produces broadband dynamic spectrum and imaging data of solar radio emission, enabling automated monitoring of solar activity. We present an AI-assisted system for real-time monitoring and reporting of solar radio activity using OVRO-LWA data streams. Machine-learning algorithms analyze dynamic spectra to detect and classify transient radio bursts, such as type II and type III events associated with coronal shocks and electron beams. The system generates automated alerts, visualization products, and event summaries, providing rapid situational awareness of solar radio activity. This framework demonstrates how AI-assisted analysis of open radio observations can enable continuous monitoring of solar activity and support studies of the Sun’s influence on the heliosphere and space-weather environment.
Meeting homepage
NASA 5th Eddy Cross-Disciplinary Symposium
Download to PDF
Abstract category
Solar Infuluence on Earth and Planetary System