

A Spectrum Study of Usage in and Adjacent to Passive Scientific Bands

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- 1.) Commission & Session: J7 Radio Astronomy Spectrum protection and interference mitigation
- 2.) New results of spectrum usage from a recently developed advanced broadband spectrum search system.
- 3.) This provides actual measured data on potential sources of interference presented previously.

Abstract:

A Radio Spectrum Evaluation System (RSES) has recently been constructed at the Georgia Institute of Technology. This system provides coverage from 500 MHz to 6 GHz and provides both azimuthally-resolved power flux density (PFD) data, as well as the omnidirectional incident power flux density. This system provided the capability to observe and analyze spectra in multiple dimensions: frequency, location, space, azimuth, polarization and time.

In this presentation measurements and analysis of spectrum usage in the 608 – 614 MHz, 1395 – 1430 MHz, and 4950 – 5000 MHz bands currently used for radio astronomy and passive sensing will be presented. The measurement of these bands was undertaken in an urban area, saturated with spectrum users, to increase the probability of intercepting spurious emissions. Such emissions are a common source of interference for passive sensing and other sensitive spectrum users. This study will be focus on establishing a baseline for determination of the future interference potential of systems such as WMTS (Wireless Medical Telemetry Service) or fixed and mobile services in shared or adjacent bands.