

Spectrum Management: The First Step in Interference Avoidance

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The best time and place to avoid interference problems to radio astronomical observations is in Geneva, at meetings of the International Telecommunications Union. Mitigation of interference during the observations or when analyzing the data involves departure from optimal conditions for observing efficiency, with the concomitant restrictions as to observation planning or possibly having to accept some data degradation.

Ideally, interference problems are avoided by not allocating to active radio services (those involving the transmission of signals) frequency bands that have the potential to give rise to interference problems with radio astronomical observations. Unfortunately, what were good allocations in the past are now, thanks to increasing spectrum use, the implementation of space radio services and many other radio services, now very unsatisfactory, but due to massive capital investments by operators of radio services are not easy to change.

This has led to the complicated and difficult situations we are faced with now, with discussions of band sharing, guardbands, collaborative scheduling, and the *equivalent power flux density model* for estimation of potential interference problems. It is more important than ever that radio astronomers participate strongly in the management of the radio spectrum: in special-interest groups such as the IAU, URSI and IUCAF, national discussions and being members of national delegations to the International Telecommunications Union.

In this talk we'll discuss the processes whereby the spectrum is managed, what is going on now, and what we need to do to ensure that there will be the minimum number of interference problems in the future, with as many of those as possible being addressable through other mitigation methods.

[URSI Commission J: Special Session on Radio Frequency Interference Mitigation](#)