

— *Working Group Session Summary* —

Weather-Related Service Management

Session 10d

Session Chair: David Morabito

Session Goals

- Identify Technologies to use in Weather Service Management for Application in Satellite Communications
- Address Weather Effects on Satellite Links

Presenters/Panelists

- Wallace Tai, JPL
- Robert Sniffin, JPL
- Shervin Shambayati, JPL
- David Morabito, JPL
- Paul Desrochers, AFRL
- Tom Shaw, OITC
- Roberto Acosta, NASA GRC
- Paul Christopher, PFC
- Sabino Piazzolla, JPL

- Welcoming Remarks
- WRSM Operational Concepts
- MRO Ka-Band Demonstration
- MRO Radio Science Experiments
- Ka-band Radar Observations at AFRL
- Data Sources for Rain Fade Forecasting
- GRC RF Propagation Research
- Diversity Benefits for Satellite Comm.
- Sky Monitoring Techniques

Key Points

- Identify Technologies to use in Weather Service Management for Application in Satellite Communications
 - Explore use of Doppler Radar incorporated into 3-D forecasting models
 - Explore use of Air Force Ka-band radar co-aligned with spacecraft track to correlate attenuation measurements
 - Explore use of Infrared camera used as a monitoring tool
 - Atmospheric de-correlation experiments for use in site characterization
 - Possible use of climatology models for future site selection (need to understand confidence of predictions)
- Address Weather Effects on Satellite Links
 - New Ka-band data from Mars Reconnaissance Orbiter correlated with effects predicted from weather data (WVR, surface meteorological data)
 - Ka-band Radar Results

Conclusions

- Identified technologies to explore or consider for use in Weather Service Management for Application in Satellite Communications
- Mapped out common interest for discussion at next year's workshop (NASA, military and commercial)
 - deep space, near-earth and ground-based measurements
- Addressed weather effects on recent spacecraft signal links