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Atmospheric Propagation V

**G. Charmaine Gilbreath
Linda M. Wasiczko**
Editors

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Introduction

This year's conference on Atmospheric Propagation was intellectually rich as well as broad in its coverage of how transmission visible and infrared light is affected by the atmosphere. As in previous conferences, theoretical and analytical approaches as well as experimental results were presented.

This year, however, there was a subtext to the papers culminating in a panel discussion on the second day on the readiness of freespace optical communications for use in the larger sectors.

This theme is embodied in DARPA's ORCA program to be lead by Dr. Larry Stotts. Dr. Stotts lead the panel discussion with a keynote address where he reviewed the history of attempts to transition laser communications technology into the commercial and DOD sectors. His question to all of us was, "Are we still an 'emerging capability' after over thirty years?" He ended his keynote with a description of ORCA for which he is the program manager. Dr. Stotts's strong feelings regarding the readiness of Lasercom were made known and became a focus point for discussion.

Panelists varied from "bullish" to more cautious. Most, however, felt that first generation laser communications is ready for transition. Dr. Phillips encouraged tenacity and called to the DOD to remain an important underwriter and agent to effect transition. Dr. Andrews agreed and reminded all that we are still faced with the challenges of the physics of the atmosphere but they are solvable. Don Boroson was "bullish" (his words) and charged the community to beware of bad engineering – that we must pay the true cost to "do it right." Monte Ross gave some early history and concurred that there is still a need for the government to commit long-term investments in sources, detectors, and systems. Morio Toyoshima offered Japan's viewpoint. In his country where space-based and terrestrial lasercom have been successfully demonstrated, the main question is, "Who is the user?" These comments all prompted Larry Stotts to call for an effective strategy. Comments and questions from the floor were then accepted and the discussion remained lively to the end of the conference day.

The conference chairs would like to take this opportunity to expressly thank all of the authors who contributed this year and to several who presented late additions to fill time periods left by canceled papers. These additional authors are: Dr. Larry Andrews and Dr. Ron Phillips, Dr. John Degnan, Mr. Carlos Font, and Dr. H. Ray Burris. Thanks also to Dr. Morio Toyoshima and Dr. Monte Ross for their participation on our panel at the end of the day.

**G. Charmaine Gilbreath
Linda M. Wasiczko**

