

PROCEEDINGS OF SPIE

***Atmospheric Optics:  
Models, Measurements, and  
Target-in-the-Loop Propagation II***

**Stephen M. Hammel  
Alexander M. J. van Eijk  
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*Editors*

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## Introduction

This 2008 conference marks the second year for a broadened set of atmospheric optics themes to include target-in-the-loop propagation. The conference remains dedicated to the analysis of atmospheric effects on optical propagation, and the remarks from the first year of the re-constituted atmospheric propagation conference continue to be relevant for the papers presented in 2008:

“The effects of the atmosphere on optical propagation can often be the limiting performance factor in many optical system applications. The increasing sophistication and complexity of many modern ultraviolet, visible and infrared systems require an increasingly accurate and comprehensive description of the propagation environment for system design and optimization.”

The effects of the atmosphere on longer optical propagation paths remain a first-order term in any system performance analysis. In spite of a large and sophisticated body of analysis of the atmospheric characterization, it is important to continue to develop new and more refined approaches. The papers presented in the first several sessions described novel approaches to problems in tracking, imaging, and beam control through the atmosphere.

Free-space laser communications remain an important application of the analysis and mitigation techniques for atmospheric beam degradation. This year we included a joint session with the Free-Space Laser Communications conference containing four papers that addressed problems in optical turbulence characterization and laser beam pointing.

The applications for a thorough understanding of the atmospheric propagation environment are not limited to free-space optical communications. Interest in high-energy laser devices for a number of defensive uses has stimulated interest in both high-fidelity models and experiment. Several papers demonstrated that modeling and analysis can now provide detailed predictions of optical propagation within inhomogeneous environments.

We are actively committed to providing a fresh perspective and approach in next year's conference, and we solicit either individual papers or group submissions on particular problems for which the conference topic set is relevant.

**Stephen M. Hammel**  
**Alexander M. J. van Eijk**  
**Mikhail A. Vorontsov**

