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Introduction

The SPIE Acquisition, Tracking, Pointing and Laser System Technologies conference continues a tradition of providing a venue for the presentation of new research and a well-documented annual assessment of on-going, practical acquisition, tracking, and pointing technology. Locating, identifying, locking onto, and maintaining track on dynamic targets is absolutely essential for precision photonic and optical systems to be able to achieve their performance goals. This year, two sessions on aero-optics were added, examining the optical effects of subsonic and transonic aerodynamic flows around the apertures of airborne optical beam control systems. We extend thanks to Professor Eric Jumper, Notre Dame University, and his team, for organizing these sessions and presenting the results of their current research in this field. The conference has focused on both theory and practice and has spanned all aspects of design, analysis, simulation, development, and testing. As a result, the last twenty-six years of proceedings from this conference provide a comprehensive history of the major technical developments within this field. The conference also includes other optics and beam control technologies, such as adaptive optics and precision line-of-sight stabilization, which are needed for many implementations of laser-based acquisition, tracking, and pointing systems in the field.

The specific advancements included in the 2012 conference reported in these proceedings include: acquisition and tracking in phased array optical systems, image and signal processing for target tracking, control systems and components, and finally the sessions on aero-optic effects.

The two and a half decade long-running success of this SPIE conference is clearly dependent on many authors and their sponsoring organizations who freely share their work with others. We extend a sincere appreciation to each of these contributors, as well as our fellow conference organizers who actively encourage their colleagues and professional associates to be a part of this event. We also recognize and appreciate the excellent SPIE staff that makes organizing these conferences such a pleasant experience.

Watch for the call for papers for the 2013 conference: Acquisition, Tracking, Pointing, and Laser Systems Technologies XXVII. We expect to continue the present scope of the conference with only minor changes.

William E. Thompson
Paul F. McManamon

