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Introduction

The methods of optical metrology have advanced significantly since the times of the early interferometers of the late 19th century. Fast cameras and processing make a whole range of new methods available today for looking at everything from fine microstructures to large astronomical systems. This conference was designed to focus on optical methods beyond traditional white-light or monochromatic-laser interferometric methods to other means of making precision measurements as well as the many applications made possible by these advances. An emphasis was placed on discussions on how metrology helps solve critical problems and answer key questions in both science and industry.

We had many excellent contributions to the 2015 conference, our inaugural year. Papers fit into four main application categories: surface measurements; techniques for system performance characterization and enhancement; strain, flow, and gradient measurements; and finally volumetric and distance-based methods. Many optical metrology techniques were discussed, including Schlieren imaging, superresolution methods, Moire and fringe projection, dynamic interferometry, spectroscopic methods, multiple-wavelength interferometry, speckle systems, high-precision LADAR, and color-based techniques. Each technique can help solve unique problems, and all are advancing rapidly as the demands for precision metrology steadily increase as cost, lifetime, and performance needs become ever more challenging.

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