

# Strain Gage Measurement Uncertainty

Sunday, June 10, 2012, 2:00 - 6:00 PM

## Instructors

Paul Gloeckner, Cummins Technical Center  
Richard Rhorer, Rhorer Precision Engineering LLC.

## Course Description

This course is an introduction to the use of the concept of reporting "measurement uncertainty" along with the data resulting from the use of traditional metal foil strain gages. The term "measurement uncertainty analysis" is similar to what was at one time referred to as "measurement error analysis". The course is intended for scientists, engineers, technicians, and managers involved in experiments and tests using strain gages. By using real test data from actual part tests and experiments, the course will cover the concepts and examples of reporting measurement uncertainty. Also presented will be some background information on strain gages and their practical use, including dynamic applications such as Kolsky Bars.

## Course Instructors

Paul Gloeckner obtained his Ph.D. in Mechanical Engineering from Purdue University in 1998. Dr. Gloeckner is a Technical Advisor and Manager of the Experimental Mechanics Laboratory at Cummins Technical Center and has over 15 years of experience in measurement system development and analysis. Dr. Gloeckner's research interests include optically-based measurement techniques,

strain-based measurements and measurement uncertainty analysis. Dr. Gloeckner is also working on development of Applied Mechanics training methods for worldwide laboratories within Cummins, Inc.

Richard Rhorer retired from the National Institute of Standards and Technology (NIST) in 2009 and has started his own company (Rhorer Precision Engineering LLC) doing consulting in the areas of experimental mechanics and precision machining. He was one of the leaders of the NIST Pulse Heated Kolsky Bar project for several years at NIST and directly involved with strain gage applications in dynamic measurements. While in graduate school at the University of New Mexico (UNM) in the mid-1960s, Rhorer was a student of Professor Richard C. Dove, one of the pioneers in the application of strain gages to dynamic measurements.

## Course 104 Fee

The regular fee is \$200 and the student fee is \$100. Course fee includes course handout material and refreshment breaks. Lodging, additional food and other materials are not included.

## Cancellation Liability

If the course is cancelled for any reason, the Society for Experimental Mechanics' liability is limited to the return of the course fees.



Held in conjunction with the SEM XII International Congress and Exposition on Experimental and Applied Mechanics  
More information can be found at <http://sem.org> • 203.790.6373 • [sem@sem1.com](mailto:sem@sem1.com)  
June 11-14, 2012 • Hilton Orange County/Costa Mesa, Costa Mesa, California, USA