



**Measurement with strain gages, transducers  
and instrumentation (DM)**

PROGRAM

Date: 29. to 30. September 2011

Location: Vantaalla, Sokos Hotel Vantaa

Lecturer: Klaus Gehrke

Organisation: HBM Finland

**Day 1**

- 9.00 - 9.15 h **Welcome and introduction to the seminar program**
- 9.15 -10.15 h **Amplifiers for the electrical measurement of mechanical quantities**
- DC amplifier
  - Carrier frequency amplifier
  - Comparison
- 10.15 - 10.45 h **C o f f e e b r e a k**
- 10.45 - 11.30 h **Calibration of a measurement chain**
- Calibration for strain measurements
  - Calibration with transducers
- 11.30 - 12.30 h **The determination of material stress in the uni-axial and bi-axial stress field from strain measurements**
- 12.30 - 13.30 h **L u n c h b r e a k**
- 13.30 - 14.00 h **Introduction to the exercises of the workshop**
- 14.00 - 15.00 h **Workshop**
- 15.00 - 15.15 h **Break**
- 15.15 - 16.30 h **Workshop**
- Continued

**Day 2**

9.00 - 10.15 h **Problems and solutions in transducer manufacturing**

- Creep
- Temperature compensation
- Standardized output signal

10.15 - 10.45 h **C o f f e e b r e a k**

10.45 - 11.15 h **Measurements with transducers**

- Possible errors
- Hints for the installation

11.15 - 12.00 h **Digital measurements**

- Digital amplifiers
- Interfaces to the computer
- Software

12.00 - 12.30 h **Planning and Execution of measurements**

12.30 - 13.30 h **L u n c h b r e a k**

13.30 - 15.00 h **Workshop**

15.00 - 15.15 h **Break**

15.15 - 16.00 h **Workshop**  
- Continued

16.00 - 16.30 h **Final discussion**  
- Distribution of the certificates