



IMEKO XIX World Congress

Fundamental and Applied Metrology

September, 6-11, 2009, Lisbon, Portugal



Call for Papers in Sessions TC21 “Mathematical Methods in Measurements”

Deadline for abstracts: 15 December 2008
See instructions in: <http://www.imeko2009.it.pt>

Topics for the TC21 Sessions at the 2009 World Congress

The main aim of the sessions is to provide a central opportunity for the metrology and testing community worldwide to engage with applied mathematicians, statisticians and the software engineers working in the relevant fields.

The Sessions are planned to address, in particular, the following topics concerning measurement in both metrology and testing fields:

Note: *Uncertainty evaluation, when not explicit, underpins all topics.*

- ***Instrumentation***

Data acquisition, virtual instruments, internet-enabled metrology, sensor characterization, sensor networks.

- ***Advanced tools for soft metrology***

Measurement techniques and uncertainty evaluation in human perception.

- ***Precision evaluation in non-quantitative measurements***

Support to ISO TC69 in studies concerning non-quantitative measurements towards a written standard (*in cooperation with ISO TC69 SC6/WG1 “Accuracy of measurement methods and results” www.iso.org*)

- ***Uncertainty and inference***

Uncertainty evaluation, treatment of systematic effects, signal processing, uncertainty evaluation for complex/multivariate quantities, dynamic measurements, model fitting and inference, support for the SI, fundamental constants

- ***Interlaboratory comparisons***

Key comparisons and support for the MRA, ILCs and laboratory capabilities, design of key comparison exercises

- ***Computational science***

Solution of PDEs, finite element modelling, multiscale modelling, atomistic modelling, inverse problems, grid computing, virtual experiments, visualisation

- ***Measurement applications***

Enterprise applications: conformance assessment, statistical quality control, experimental design (*in collaboration with ENBIS “European Network on Business and Industrial Statistics” www.enbis.org*). Implementation of written standards; health applications, environment applications; chemical metrology applications. Implementations for specific physical quantities.

- ***Measurement software development and validation***

Validation framework, data access, XML, security, software libraries

For further information please contact, or send your proposed contributions in copy to:

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Note: Authors may indicate in their abstract submission their wish to have their contribution(s) accepted in a joint IMEKO TC21-TC7 Session, to allow the organisation of IMEKO World Congress to make a decision.