



Email subrena.harris@npl.co.uk to receive email notifications of the latest newsletter and forthcoming Measuring the Impossible Network (MINET) events.

ANNOUNCEMENTS

MINET Conference Announcement

MINET book

Measurement, sensation and cognition

Measurements With Persons: theory, methods and implementation areas



10 - 12 November 2009

National Physical Laboratory, London, UK

This conference will be an opportunity to discuss the latest developments in current research and the future direction of the Measuring the Impossible research area.

The conference will focus on the following subject areas:

- Perception (e.g. visual, tactile, multisensory)
- Cognition (individual and social behaviours)
- Emotion
- Data interpretation and analysis
- Instrumentation
- Measurement techniques and protocols
- Measurement uncertainty
- Measurement theory
- Standardisation

The conference will consist of **contributed** and **invited papers**, a **poster/demonstration session**, a **round-table discussion** of the Measuring the Impossible research area, and the presentation of the **MINET Expert Group report** giving the experts' view of the future direction of Measuring the Impossible research.

For the latest information on the conference, and **to submit** a paper for oral or poster presentation please visit:
<http://minet.wordpress.com/events/workshop4/>

Key dates:

- Paper acceptance notification: **18th September 2009**
- Registration close: **16 October 2009**

Future MINET Events

XIX IMEKO World Congress	6 – 11 September 2009
MobileHCI 2009 session	15 September 2009
Workshop 4	10 – 12 November 2009
Newsletter 6	Winter 2010

Following the successful [MINET training course](#) in 2008 a book is being written that will cover a similar range and depth of interdisciplinary subjects relevant to the Measuring the Impossible research area: "Measurements with Persons: theory, methods and implementation areas".

The main aim of the book is to give scientists the opportunity to widen their background and prepare themselves for the interdisciplinary problems typical of Measuring the Impossible topics.

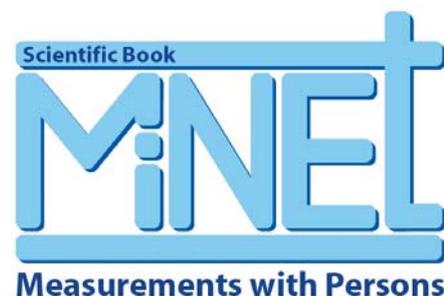
As a **general outline** the first part of the book will deal with fundamental methods of measurement, such as measurements in psychology, physical parameters in sensory physics, measurement in behavioural and social science, applications of measurement theory, and more.

This will be followed by a presentation of some applications of Measuring the Impossible problems, such as measuring and reconstructing multiscale dynamics, skin senses and haptic perception, smell, food and taste, visual perception, body language, neural networks and fuzzy sets, fuzzy logic, and more.

We are pleased to announce that [Taylor & Francis](#) will publish the interdisciplinary MINET book their [Psychological series](#).

The book is foreseen to be **released in 2010**. People in the e-MINET community will be advised of the publication and further details will be given in the next issue of the MINET Newsletter.

To join the e-MINET community visit:
<http://www.eminetnetwork.com/>



MINET Expert Group report

A group of prestigious scholars, representing different scientific disciplines involved in "Measuring the Impossible", has been appointed to be members of the MINET expert group. The remit is to assess the current state of the art and make recommendations for the future direction of Measuring the Impossible research.

The Expert Group has been appointed by the MINET Steering Committee. It is currently composed of:

- **Eugene Galanter** (Chair), specialist in psychology, psychometrics and psychophysics. Quondam Director at Psychophysics Laboratory, Columbia University (New York) and also founder and chairman of Children's Progress Inc. (New York)
- **Kamal Hossain** (Co-Chair), expert in physical and sensory metrology, Director of Science and International Cooperation, National Physical Laboratory (London)
- **Maria Concetta Morrone**, specialist in neuroscience, vision and brain imaging, University of Pisa and Institute of Neuroscience CNR
- **Paul Bourguine**, expert in mathematical modelling and complexity, CNRS (Paris)
- **Birgitta Berglund**, MINET Coordinator and specialist in psychological metrology and psychophysics/environmental psychology, Department of Psychology at Stockholm University.

An Expert Group report will be written and will be presented at the MINET conference in November 2009 at NPL.

To find out more about the MINET Expert Group please visit: <http://minet.wordpress.com/membersarea/future/>

MINET Final plenary meeting

A MINET final meeting is to be held in Brussels in January 2010, to report the results of MINET and the conclusions of the Expert Group Report. The MINET project leaders, Stockholm University (SU), plan to hold this meeting in Brussels. The meeting should attract a maximum of 40 attendees. SU plans to invite external people involved in appropriate Directorates at the Commission. Internal MINET invitees include all partners, the Expert Group and the Advisory Board, as well as specially invited stakeholders in the field of Measuring the Impossible.

For further information please contact the MINET Steering committee:

minetsc@measuringimpossible.net

Members' area of MINET website

A [members' area](#) has been set up on the MINET website. This is a restricted access area, and is password-protected. Only e-MINET members can gain access to these pages.

The members' area holds a lot of useful information...

	e-MINET	A network of people interested in MINET research
	Study Visits	Funding program for MtI project members to hold short research exchange visits
	Repository	Online database containing references relevant to 'Measuring the Impossible' research
	Training course & handbook	Presentations from the MINET training course
	Workshops	Presentations from MINET workshops
	Future	The future of Measuring the Impossible research

To visit the members' area:

<http://minet.wordpress.com/membersarea/>

To join e-MINET please register here:

<http://www.eminetnetwork.com/register.php>

MINET

Changes in MINET administrative support personnel

From 17 March 2009, Dr. Anders Höglund has been in charge of the administrative support for the MINET Project Coordinator. Anders Höglund has a PhD in Polymer Chemistry from the Royal Institute of Technology in Stockholm, Sweden.

MINET Study Visits

Call 3

The 3rd call for the MINET Study Visits closed in January 2009. Three proposals were financed out of a set of five proposals received:

- Giovanni Battista Rossi from University of Genova, visiting MONAT coordinator Teresa Goodman at NPL, UK
- Boris Velichkovsky from Dresden University and PERCEPT coordinator visiting EYEWITMEM coordinator Asher Koriat at Haifa University
- Marco Fabiani, from Royal Institute of Technology (KTH) in Stockholm, visiting Jordi Bonada at Pompeu Fabra University in Barcelona, Spain

Case study: Marco Fabiani study visit

"This short visit allowed me to establish contacts with many experts in the field of signal processing, music analysis and information retrieval, and music performance.

The two goals of the visits, that of getting a better understanding of the advanced techniques developed at MTG and that of fostering future collaborations, have been met. Different ideas for possible collaborations (e.g. on new approaches in audio time-scale modification, on the automatic classification of musical instruments' dynamic levels, and on the integration of the KTH music-performance rules with those from MTG) have been discussed, and will be further developed in the future, possibly during a longer visit at MTG."

Call 4

The 4th and final Study Visit call has been made and this closed in April 2009. Currently two proposals have been accepted, and a further 4 proposals are being considered.

- Representatives from the MONAT project will visit Beatrice de Gelder and Frans Cornelissen at Tilburg and Groningen Universities to discuss measurement methods used in psychology and cognitive neuroscience
- Federico Fontana, from University of Verona, will visit Roberto Bresin at KTH, Stockholm to investigate active parameters to which humans are exposed during walking tasks

For further information on study visits, please visit:
<http://minet.wordpress.com/membersarea/studyvisits/>

MobileHCI 2009 conference
15 September 2009, Bonn, Germany

**Session: "Measuring Mobil Emotions:
Measuring the Impossible?"**

Emotions are a key element in the analysis of user experience. Observational analysis, interviews and questionnaires can be supported by various physiological measurement methods (e.g. GSR or EMG) to investigate such emotions.

This workshop addresses approaches to mobile emotion measurement, particularly the state-of-the-art in emotion research and investigates the possibilities to apply and adopt these methods in the field of mobile HCI and user experience research.

For further details please visit: <http://mme.cure.at>
Contact: gevan@cure.at

Measuring the Impossible workshop at XIX IMEKO World Congress

6-11 September 2009
Lisbon, Portugal

During the XIX World Congress of the International Measurement Confederation (IMEKO), 6-11 September 2009, Lisbon, Portugal, a **Workshop on Measuring the Impossible: Measurement of quantities related to human perception and interpretation** will be held.

Workshop chair: G. B. Rossi

Co-chairs: L. Mari (Leader of TC7 - Measurement Science), K. Ito (Leader of TC18 - Measurement of Human Functions), F. Pavese (Leader of TC 21 - Mathematical Tools for Measurements).

The **preliminary programme** includes the following presentations:

- G. B. Rossi, B. Berglund, "Measurement related to human perception and interpretation – State of the art and challenges"
- P. Thomas, R. Jones, J. Kearns, "Measurement of parameters to value human life"
- M. Watanabe, Y. Yamamoto, K. Nakakoji, H. Kambara, Y. Koike, "Estimation of relatively commanded force from EMG and its application to human-machine interfaces"
- J.C. Krynicki, "A simplified method to create a leverage index for satisfaction surveys out of customer verbatim"
- K. Sapozhnikova, R. Taymanov, "Multiparametric measurement of emotions"
- F. Pavese, "On the degree of inter-subjectivity in non-quantitative or prior information and in uncertainty evaluation in metrology"

A **round table discussion** will follow.

IMEKO world congress:
http://www.imeko2009.it.pt/home_v2.php



REVIEW OF MINET EVENTS

MINET Workshop 3

14 - 15 May 2009
Wageningen, the Netherlands



Workshop 3 delegates

The aim of the workshop was to share advancements, findings and achievements of research projects funded within the EU-FP6 'Measuring the Impossible' initiative, as well as other research projects related to 'impossible measurements'. It addressed research and novel investigative methods for the measurement of multidimensional, complex phenomena.

The workshop was set up to offer an open and unrestricted dialogue among researchers in areas such as the physical, natural, psychological and social sciences. In total 41 researchers from 11 countries participated in the workshop.

The program consisted of **2 invited presentations, 14 other presentations** related to the Measuring the Impossible field and 1 demonstration with presentation at the Restaurant of the Future, a research facility in Wageningen. Presentations will be available on the workshop 3 site: <http://minet.wordpress.com/events/workshop3/>

The first invited lecture was by **Prof J. Koenderink**, Technical University Delft, who studies measurements from a perception point of view. In his presentation '**Sizing up mental objects**', his premise was that perception is controlled hallucination: perceptions are elements of the observer's 'user interface', rather than representations of the scene in front of them.

The second invited lecture, '**Measuring Cognition**', by **Prof H. Bekkering**, University Nijmegen, addressed the measurement problem from a different perspective. According to 'embodied cognition', an organism develops an understanding of its own basic perceptual and motor-based abilities, while learning to control its own movements and to perform certain actions.

The workshop ended with a **discussion on future research directions** for Measuring the Impossible. The results of the discussion are on the MINET website and everybody who attended Workshop 3 and Think tank D is cordially invited to participate in this discussion. The password for accessing these pages has already been sent by email. Results of the discussion will be used as one input to the Expert Group report on this topic.

Workshop 3 discussion site:
http://minet.wordpress.com/2009/05/26/future_discussions/

Think Tank D

13 May 2009
Wageningen, the Netherlands

At the final MINET Think Tank D event participants addressed the subject of '**Decision-making & Impact Assessment**' and debated the questions:

- i. *How can decisions be made based on Perceptual Measurements?*
- ii. *What are the impacts?*

The MINET Think Tank D event had 2 invited presentations, one introductory lecture and one case study:

'Science versus Justice: the case of Lucia de B'

Prof Richard Gill, Mathematical Institute, Leiden University

'Probabilistic health impact assessment for decisions on food safety'

Hilko van der Voet, Wageningen University



Prof Richard Gill

The event also included breakout discussions amongst the participants, debating questions such as:

I. How does **measurement uncertainty** enter into making decisions based on measurements? Is it possible to make decisions based on measurements that are not accompanied with uncertainty statements?

II. What role can a **probabilistic approach** play in decision making? For example, can we state the probability that a certain smell is perceived as being 'more annoying' than another smell?

III. Is there a way to make statements with a certain **confidence** based on measurements? For example, we are 99% confident that a statement is valid and thus we can make a specific decision.

IV. Apart from percent probabilities, are there **other measures** (economic, impact, risk etc.) of the significance and consequences of decisions based on measurement?

V. Can the expected impact of decisions be used together with measurement uncertainty in order to make '**optimal decisions**'?

For further information on Think Tank D event please visit:
<http://minet.wordpress.com/events/thinktankd/>

NEWS FROM Mtl PROJECTS



Music research for the public

The EU-funded project 'Tuning the Brain for Music' celebrated its scientific progress and successful collaboration with two public events in 2009. The two-day workshop 'Music, emotions, and brain plasticity' hosted by the project coordinator Dr. Mari Tervaniemi in Helsinki (Finland) brought together international experts in the field of music perception and cognition, interested students and researchers, and the general public. The high quality talks and lectures included a wide variety of topics such as music emotions, the development of music and auditory skills, music performance and expressivity, and music in clinical perspectives. During the poster session and the social program, more than 100 participants were given the opportunity to learn about ongoing scientific advances, to discuss and exchange ideas and to establish new contacts.

The 'Music and emotion days' were nationally organized in the project's partner countries of Finland, Germany, Sweden and Italy, and initiated the final phase of 'Tuning the Brain for Music'. The hands-on science day gave interested laymen and children the possibility to explore directly present research methods and approaches. Demonstrations of brain research measurements and newly developed virtual instruments for children were complemented by talks and podium discussions. 'We were overwhelmed by the immense public interest in our work. It showed that our scientific approach to music and its effect on human well-being is an endeavour that should be taken further in future', said Dr. Minna Huotilainen. Detailed information about the workshop and the public science day can be found at: <http://www.braintuning.fi/publicevents.html>

Measuring the Impossible Paper for NCSLi 2009 symposium, USA

26 – 30 July 2009

A paper describing the Measuring the Impossible research issues and MINET coordination activities in this field has been accepted for presentation at the NCSLi Symposium in San Antonio, Texas, an international event. This is an excellent opportunity to present the Mtl initiative to this international audience. The paper will be presented by Leslie Pendrill.

- L R Pendrill *et al.*, "Measurement with Persons: A European Network", NCSLi Symposium, San Antonio (TX, USA) July 26 – 30 2009

http://www.ncsli.org/conference/abstract/index.cfm/fuseaction/home.dsp_abstract_detail/abstract_id/999.cfm



MONAT/SynTex Joint Meeting

The MONAT and SynTex projects met for a joint one-day meeting at Barcelona University in May 2009. This followed a very interesting joint meeting at NPL in London in November 2008. Each project gave a series of presentations, covering sample choice and preparation, physical and psychophysical measurement procedures and modelling, with time for discussion afterwards.

The MONAT project is seeking to create a model that can be used to predict the perceived degree of naturalness of a range of natural and synthetic samples of wood, fabric and stone. The SynTex project is researching the emotional qualities and expectations associated with specific textures. Both groups aim to provide methods and a theory to objectively measure, model and predict psychophysical or psychological effects.

The projects are starting to address the need of designers to understand which are the salient visual (colour, gloss, pattern, texture) and tactile (temperature effects, roughness, friction) characteristics of a surface when eliciting a particular perceptual response. Both groups have met similar challenges and discussing approaches and ideas has been fruitful. One area of collaboration was the use of each other's test stimuli for measurement and modelling.

As the projects come to an end it is intended that their outputs will have substantial impact on product design and that designers of buildings, consumer products, virtual reality systems, internet pages, and games, will ultimately profit from the ability to communicate additional information, use predictive models and achieve intended psychophysical/psychological effects.

Measuring the Impossible paper presented at the Metrologie 2009 conference

A paper describing Mtl main issues and MINET coordination activities in this field was presented at an important international conference devoted to metrology: Metrologie 2009. The paper was presented by Leslie Pendrill.

- B Berglund *et al.*, "Measurement of Perception: A European Network 'Measuring the Impossible'", Métrologie 2009 Congress, 22 – 25 June 2009, Paris, France http://www.metrologie2009.com/conf_en.php?page=prog2009

TOPIC FOR DISCUSSION

Measurability

What can be measured? This is a key question for measurement in general and particularly for the measurement of quantities related to human perception and interpretation. Very recently, the following *measurability criterion* has been proposed (Rossi G B, Measurement 40 (2007) 545-562).

A general procedure for ensuring the measurability of a characteristic comprises the following steps:

1. Define the class of objects that manifest the characteristic;
2. Identify the empirical properties that define the characteristic;
3. Construct a reference measurement scale, that is select a set of standard objects "representative" of the possible manifestations of the characteristic and assign to each of them a measure that complies with empirical relations;
4. Find at least one empirical procedure for assigning measures to elements not included in the reference scale that comply with empirical relations.

It is therefore suggested that *a characteristic x is measurable if it is possible for the above procedure to be satisfactorily applied to it.*

What do you think of this proposal? How does it compare with your current knowledge and understanding of this subject, with your professional experience and with your vision?

Feedback and comments are warmly encouraged.

Please visit www.measuringimpossible.net