IAEA
International Atomic Energy Agency

Workshop on Uncertainty Estimations for Radiation Measurements

3–7 April 2017

IAEA Headquarters, Vienna, Austria
Venue: Building M, M0E Press room

Programme

Expert Lecturers:

Peter Ambrosi

Physikalisch-Technische Bundesanstalt (PTB), Germany

Mehenna Arib

King Faisal Specialist Hospital and Research Centre, Kingdom of Saudi-Arabia

Costas Hourdakis

Greek Atomic Energy Commission (EEAE), Greece

IAEA Staff involved:

Paula Toroi, Ladislav Czap, Tom Bokulic, Istvan Csete

Mirja Kemppi, Simona Ciortan, Giorgia Loreti

Monday, 3 April 2017: Tools for uncertainty calculations	
08:30 – 09:30	Arrival at VIC (Gate 1) for ground pass and security
09:30 – 10:00	**Opening and General Information** Joanna Izewska and Paula Toroi
10:00 – 10:30	**Entrance Test** All
10:30 – 11:00	**Course introduction,** **international measurement system and uncertainties** Paula Toroi
11:00 – 11:30	**International guides for uncertainty estimations** Paula Toroi and Istvan Csete
11:30 – 12:00	Group photo and administrative issues
12:00 – 13:00	Lunch break
	FUNDAMENTALS
13:00 – 14:30	**Principles of uncertainty determination according to the GUM: definitions, component uncertainties and practical exercises** Peter Ambrosi
14:30 – 15:00	Coffee break
15:00 – 16:30	**Principles of uncertainty determination according to the GUM: overall uncertainty and practical exercises** Peter Ambrosi
16:30 – 17:00	**Guidance for the home work** Peter Ambrosi

Tuesday, 4 April 2017: Methods for uncertainty estimations	
08:30 – 09:00	Arrival at VIC and security check
09:00 – 09:30	Discussion about the home work and Questions
	GENERAL GUIDANCE
09:30 – 10:00	**Practical guidance: how to prepare your own uncertainty budget during the workshop?** In groups: plan your practical example Paula Toroi
	QUANTITY RELATED UNCERTAINTIES
10:00 – 11:00	**Uncertainties related to establishment of a dose quantity in PSDL and practical exercises** Peter Ambrosi
11:00 – 11:30	**Comparisons and Degree of Equivalence** Costas Hourdakis
11:30 – 12:30	Lunch break
	CONDITIONS RELATED UNCERTAINTIES
12:30 – 14:30	**Influence quantities in dose measurements, ambient influence quantities, radiation field specific influence quantities and practical exercises.** Mehenna Arib
14:30 – 15:00	Coffee break
	OPERATION RELATED UNCERTAINTIES
15:00 – 17:00	**Timing uncertainties, chamber positioning, conversions from air kerma and practical exercises** Costas Hourdakis

Wednesday, 5 April 2017 Uncertainties in radiation measurements 1	
08:30 – 09:00	Arrival at VIC and security check
	CHAMBER RELATED UNCERTAINTIES
09:00 – 10:00	**Chamber specific influence quantities and practical exercises** Ladislav Czap
10:00 – 11:30	**Group work:** **Work on your uncertainty budgets together with the experts**
11:30 – 12:30	Lunch break
	MEASUREMENT CHAINS
12:30 – 14:30	**Uncertainties in Radiation protection** Peter Ambrosi
14:30 – 15:00	Coffee break
15:00 – 17:00	**Uncertainties in Radiation therapy** Mehenna Arib

Thursday, 6 April 2017 Uncertainties in radiation measurements 2	
08:30 – 09:00	Arrival at VIC and security check
09:00 – 11:00	**Uncertainties in X-ray imaging** Costas Hourdakis
11:30 – 12:30	Lunch break
12:30 – 13:00	**Uncertainties in Brachytherapy** Ladislav Czap and Tomislav Bokulic
13:00 – 13:30	**Uncertainties in patient dosimetry** Paula Toroi
13:30-14:00	**How to decrease uncertainties?** Mehenna Arib
14:00 – 14:30	Coffee break
14:30 – 17:00	**Group work: Finalize your own Uncertainty Budget**
18:00 – 21:00	**Dinner**

Friday, 7 April 2017 Final uncertainty budgets	
08:30 – 09:00	Arrival at VIC and security check
09:00 – 09:30	Discussion, Questions and guidance for the presentations
09:30 – 11:30	**Group presentations and discussion**
11:30 – 12:30	Lunch break
12:30 – 13:30	**Group presentations and discussion**
13:30 – 14:00	**Wrap-up**
14:00 – 14:30	**Exit Test and Course Evaluation** All
14:30 – 15:00	**Closure** Paula Toroi

Please note:

- This is a preliminary program and we reserve the right to change it.