



Czech Association
of
Medical Physicists



EFOMP



ESMPE European School for Medical Physics Experts – Prague, July 2016

Practical aspects of Radiation Dosimetry in Targeted Radionuclide Medicine Therapy

July 7– July 9, 2016
Prague, Czech Republic

The EFOMP in collaboration with the Czech Association of Medical Physicists and the Department of Dosimetry and Application of Ionizing Radiation of Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague would like to invite you to the next **ESMPE_NM 2016**.

The school will be aimed at advanced tasks connected to **Dosimetry in Nuclear Medicine Therapy** and will be focused on practical aspects with execution by all participants under the guidance of experts. This two-and-half day event will be EFOMP accredited and is intended for practising clinical Medical Physicists who are at the level of a Medical Physics Expert (MPE) in Nuclear Medicine or working towards becoming an MPE. As in last year's school, there will be an optional examination at the end for those seeking a higher level of certification beyond attendance.

Content

After an **introduction** to theoretical aspects of radiopharmaceutical dosimetry, the course will be focussed on clinical applications and **practical examples**.

Participants will work on practical examples using available (free) software, in order to gain significant practical experience.

With that objective, all participants are required to bring with their own laptop, mouse, and the following preinstalled software:

- ImageJ (<http://imagej.nih.gov/ij/>)
- Slicer3D (<https://www.slicer.org>)
- Python (<https://www.python.org>) Version 2.7 is sufficient
 - o Some python libraries : numpy, matplotlib, pandas, scipy
- Excel or equivalent spreadsheet

A range of practical examples will be covered:

- Non-image-based dosimetry will be addressed, with external (whole-body) counting (mIBG therapy) or blood-based dosimetry (thyroid treatments).
- Radioembolisation of ⁹⁰Y microspheres will be covered, as a relatively “simple” example where pharmacokinetics assessment is not required.
- Peptide receptor radionuclide therapy (PRRT) will be addressed, as an example to demonstrate how various factors can influence absorbed dose determination.

Python scripting will be introduced and used in a clinical context as a means to speed-up and increase the robustness of clinical dosimetry.

General discussion

Feedback from lecturers, participants and clinical examples, discussion on available software for dosimetry.



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Final exam

The final exam is voluntary. Participants can gain double MPE credits when successfully pass the test. The basic number of CPD credits (for attendance only) is 17.

EFOMP CPD Accreditation

The Summer school 2016 will obtain EFOMP accreditation as Continuing Professional Development for Medical Physicists.

Organizers

Jaroslav Ptáček, Tereza Hanusova (Czech Republic)

Manuel Bardiès (Scientific Chair), **Marco Brambilla** (Chair of the school), **Alberto**

Torresin (Chair of the EFOMP E&T committee), **John Damilakis** (EFOMP President)

Lecturers

Manuel Bardiès	Centre de Recherches en Cancérologie de Toulouse, Toulouse, France
Carlo Chiesa	Istituto Nazionale per lo Studio e la Cura dei Tumori – Milano, Italy
Ludovic Ferrer	Institut de Cancérologie de l'Ouest René Gauducheau - Saint-Herblain - France
Glenn Flux	Royal Marsden Hospital and Institute of Cancer Research, Sutton, United Kingdom

Time-table

7th July Thursday	Title	Description	Main Lecturer
8:00-9:00	Registration		
9:00-10:00	Introduction to Radiopharmaceutical dosimetry	General formalism for dosimetry	M Bardiès
10:00-10:30	Coffee break		
10:30-11:30	Whole body dosimetry	Dosimetry without imaging	G Flux
11:30-12:30	Blood dosimetry	Dosimetry without imaging	C Chiesa
12:30-14:00	Lunch break		
14:00-15:00	Radioembolization of hepatocarcinoma with ⁹⁰Y microspheres	Development of an individualized treatment planning strategy based on dosimetry and radiobiology	C Chiesa
15:00-16:00	Radioembolization of hepatocarcinoma with ⁹⁰Y microspheres	Practical Example 1	C Chiesa
16:00-16:30	Coffee break		



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16:30-17:30	Radioembolization of hepatocarcinoma with (90)Y microspheres	Practical Example 2	C Chiesa
17:30-18:30	Alpha emitter ²²³ Ra dichloride therapy	Biodistribution, pharmacokinetics and dosimetry	G Flux
20:00-23:00	Social dinner - participants + lecturers		

8th July Friday	Title	Description	Main Lecturer
9:00-10:00	Peptide Receptor Radionuclide Therapy using radiolabeled somatostatin analogs	How the combination of dosimetry and radiobiological modeling may help in exploring the link between the treatment schedule and the potential clinical outcome.	G Flux
10:00-10:30	Coffee break		
10:30-12:30	3D PRRT dosimetry with ImageJ and Excel	Practical Example	G Flux
12:30-14:00	Lunch time		
3rd July Friday	Title	Description	Lecturer
14:00-15:00	Instruments for Clinical Dosimetry	Introduction to Slicer/Python	L Ferrer
15:00-16:00	Example 1	Investigation of the influence of S values	L Ferrer
16:00-16:30	Coffee break		
16:30-18:30	Example 2	Determination of the time activity curve and the cumulated activity TAC fitting and \tilde{A} modelling	L Ferrer

9th July Saturday	Title	Description	Lecturer
9.00-11.00	Example 3	Clinical Example	L Ferrer
11.00-12.00	Summary	Discussion of results	L Ferrer
12:00-12:30	Coffee break		
12:30-14:00	Final exam		



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Further information

Course language	English
Level	MP to MPE
Registration fee	300 € 2 main meals, 5 coffee breaks included, 1 social dinner
Reduced registration fee - subsidized by EFOMP - first-come, first-served policy	150 € - for the first 15 attendees (max. 3 from one country) coming from the following European countries: Albania, Belarus, Bosnia Herzegovina, Bulgaria, Cyprus, Estonia, Greece, Hungary, Kosovo, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Turkey, Ukraine.
Maximum number of participants	40
Duration	7 Jul 2016 – 9 Jul 2016
Study load	17 hours of lectures and demonstrations
Venue	Department of Dosimetry and Application of Ionizing Radiation, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague, Břehová 7, 115 19 Prague 1, CZECH REPUBLIC
GPS coordinates	50°5'27.737"N, 14°24'58.713"E
Accommodation	Individual (possible via accommodation agency)
Information, program, etc.	www.csfm.cz/summer2015.html
Registration	Electronic registration via www.csfm.cz/summer2015.html
Registration period	15 Feb 2016 – 30 June 2016

For all practical information, including accommodation and public transport in Prague, please contact Czech part of organizing committee: summer2016@csfm.cz. You will be informed about accommodation possibilities, transportation etc. in registration confirmation e-mail.

Electronic registration and e-mail address will be functional from 15 Feb 2016.