

HelmholtzZentrum münchen

German Research Center for Environmental Health



Training activities on Radiation Protection in Nuclear Medicine in the frame of the **EURATOM FP7** collaborative project **MADEIRA**

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ORAMED 2011, Barcelona, 22/01/11



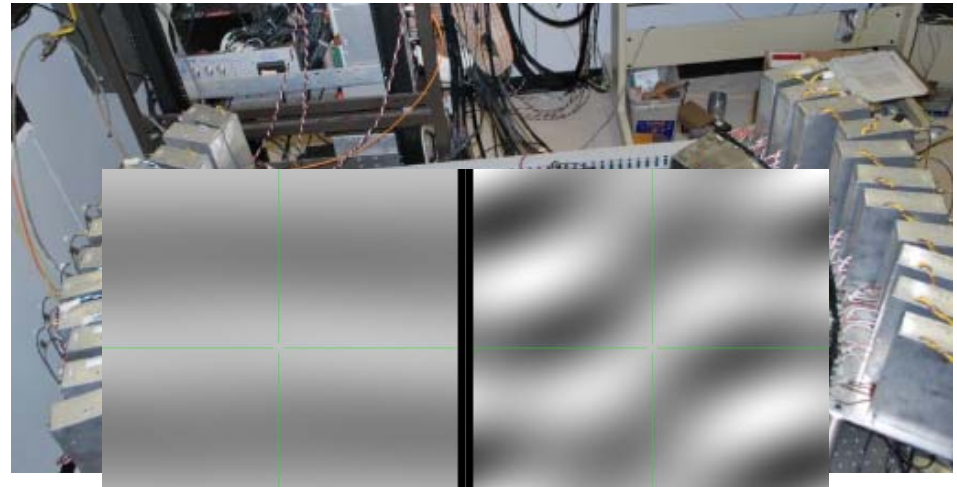
MADEIRA in FP7 – EURATOM Seventh Framework Programme

Minimizing Activity and Dose with Enhanced Image quality by Radiopharmaceutical Administrations

The **MADEIRA** project started 01/2008 and ended 12/2010.

It was aimed to improve the efficacy and safety of 3D PET and SPECT functional imaging by optimising

- the spatial resolution of the diagnostic images
- their signal-to-noise ratio and
- the knowledge of the temporal variation of the radiopharmaceuticals' concentration in tumour and healthy tissues



MADEIRA in FP7 – EURATOM Seventh Framework Programme

Minimizing Activity and Dose with Enhanced Image quality by Radiopharmaceutical Administrations

7 partner institutions:

Helmholtz Zentrum München, Germany

Prof. Dr. C.Hoeschen, Project Coordination

Dr. A.Giussani, Project Management

Skåne University Hospital, Malmö, Sweden

Prof. Sören Mattsson

Jožef Stefan Institut, Ljubljana, Slovenia

Prof. Marko Mikuž

CSIC, Valencia, Spain Dr. Carlos Lacasta

SCIVIS, Göttingen, Germany Dr. G.Ebel

Università degli Studi di Milano, Italy

Prof. Marie Claire Cantone

University of Michigan, USA

Prof. Neal Clinthorne



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A Giussani: MADEIRA Training courses



Scientific organization of the MADEIRA project

**Minimizing Activity and Dose with Enhanced Image quality
by Radiopharmaceutical Administrations**

WORKPACKAGE 1: ASSESSMENT OF CLINICAL DATA

Coordinated by Skåne University Hospital, Sweden (Prof. Sören Mattsson)

WORKPACKAGE 2: PET MAGNIFIER PROBE DEVELOPMENT

Coordinated by Jožef Stefan Institut, Slovenia (Prof. Marko Mikuž) in cooperation with CSIC (Dr. Carlos Lacasta) and University of Michigan (Prof. Neal Clinthorne)

WORKPACKAGE 3: PHYSICS-BASED IMAGE PROCESSING

Coordinated by Helmholtz Zentrum München (Prof. Dr. Christoph Hoeschen) in cooperation with SCIVIS (Dr. Gernot Ebel)

WORKPACKAGE 4: BIOKINETIC AND DOSIMETRIC MODELLING


Coordinated by Università degli Studi di Milano (Prof. Marie Claire Cantone) in cooperation with Helmholtz Zentrum München (Dr. Augusto Giussani).

Training activities in the MADEIRA project

WORKPACKAGE 5: TRAINING AND DISSEMINATION ACTIVITIES


Coordinated by Helmholtz Zentrum München (Dr. Augusto Giussani)

- Mobility and exchange of young researchers (PhD students, early PostDocs)
- Organization of three Training Courses:



EUROPEAN COMMISSION
RESEARCH DIRECTORATE-GENERAL

RADIATION PHYSICS FOR NUCLEAR MEDICINE
First MADEIRA training course
18-21 November 2008, Milano, Italy
In memory of Prof. Niki Molho



EURATOM
MADEIRA Project



2nd MADEIRA Training Course Radiation Protection in Nuclear Medicine

17-20 November 2009, Malmö, Sweden

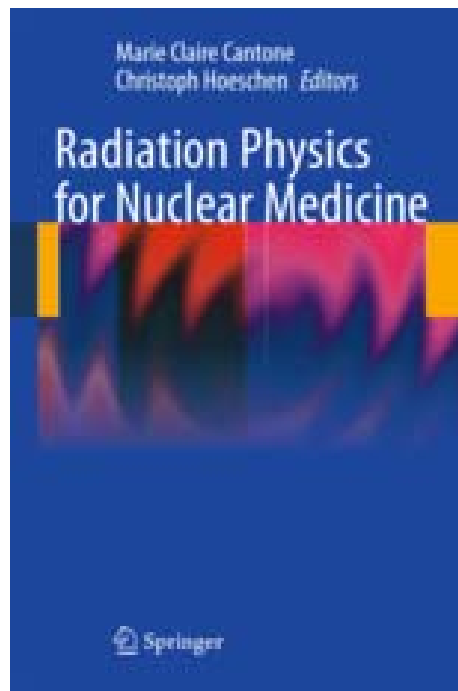
Third MADEIRA Training Course on IMAGING IN NUCLEAR MEDICINE

5-8 October 2010
München, Germany

The MADEIRA Training Courses

A four-day theoretical and practical course oriented to university students and young researchers.

Topics: issues regarding nuclear medicine
presentation of research performed in the frame of the project



Each training course accompanied by a book on the same topic published by Springer Verlag (first volume to be published in Spring 2011)

The Second MADEIRA Training Course

The course was aimed for medical physicists, technicians, physicians in nuclear medicine and radiology, radiochemists, engineers, PhD-students, radiation protection experts and others involved in nuclear medicine, radionuclide production and radiation protection.

	Tuesday 17/11	Wednesday 18/11	Thursday 19/11	Friday 20/11
09.00	Welcome The MADEIRA project	Meet the teachers (optional)	Meet the teachers (optional)	Meet the teachers (optional)
09.15	Quantities used in radiation protection (SM)	Radiation doses from patients (DZ)	Radiation protection during production, labelling and injection (SLS, LS)	Current research: Radiobiology of the lens of the eye (ICRP Cte 1) (GD)
10.00	Radiation protection detectors and dose meters (EF)	Radiation exposure of embryos, fetuses and children (MCC)	Occupational exposure (SK)	Quality assurance, reference activities
10.45	Coffee break	Coffee break	Coffee break	Coffee break
11.15	Radiobiology, Critical organs (patients and staff members) (PB)	Shielding, calculation exercises	Releases to environment from hospitals and patients (SM)	Questions and discussions Rules of the thumb
12.00	Effective dose Radiation doses to patients (AG, CH) -biokinetic models -phantoms	Shielding, computer exercises (HU)	An introduction to OLINDA (AG, SLS)	Course evaluation
12.45	Lunch	Lunch	Lunch	Lunch
14.00	Cont. Effective dose, Radiation doses to patients (AG, CH) -biokinetic models -phantoms	Visit to Bispebjerg Hospital and Herlev Hospital in Denmark Including lecture: An example of shielding in PET work (MNL)	Guided exercises: -on patient dose calculation, OLINDA (SLS) -practical exercises on shielding (^{99m}Tc vs ^{18}F)	
	15.00 Get together			

The Second MADEIRA Training Course

	TC2
Number of participants:	44
of which: from host country:	24
from other EU countries:	17
from other european countries:	1
from outside Europe:	2
Medical physicists / hospital	15
Medical physicists / univ.-research	4
Other physicists	-
Radiation protection officers/regulators	2
Physicians	1
Postdocs	2
Students	14
Other	1
Course evaluation (on a scale from 0 to 5)	4.0
Utility for future career	3.9

Is there a future after MADEIRA?

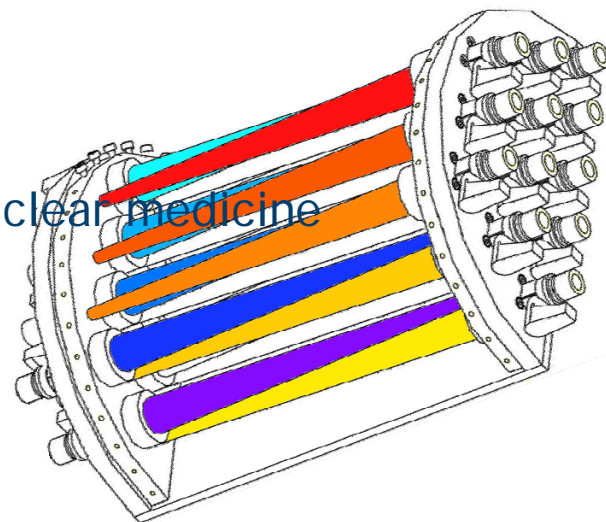
Need for training in Nuclear Medicine (several students requested the continuation of the TC series, even after MADEIRA)

"Fidelity": seven students participated (or applied to) more than 1 TC, in other cases colleagues of the same group/department participated to different TCs

FUTURE COURSES???

Definition of a dedicated **TRAINING** goal

Ex.: operational radiation protection in nuclear medicine
biokinetic and dosimetric studies
QA activities (MADEIRA phantom)



Continuous medical education credits (CME)? Important for hospital personnel

Cooperation with other bodies: EANM, EFOMP, IAEA...



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For further information

www.madeira-project.eu
www.madeira-training.org
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