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WELCOME FROM THE PRESIDENT OF THE CONGRESS

The European Federation of Organisations for Medical Physics (EFOMP) is currently representing a community of more than 6000 medical physicists in Europe (www.efomp.org). Every second year EFOMP is organizing together with a host national society of Medical Physics its Biennial Congress.

In 2007 the Xth EFOMP congress has been organized in conjunction with the Italian Association of Medical Physics (AIFM) in the beautiful international resort "Il Ciocco" in the vicinity of Pisa, Italy. The event is scheduled for mid-September, when the Tuscany climate is at its best for enjoying the landscape and the countryside of the Garfagnana hills and mountains.

The special goal for this congress is to present a state-of-the-art of Medical Physics in its various subspecialties: from Radiotherapy to Diagnostic Radiology, from Nuclear Medicine to Medical Imaging, from Radioprotection to Physiological Measurement Techniques. For this purpose top scientists in these fields will be invited to give overview talks. One of the main tasks of EFOMP is to promote and to harmonize the best practice of Medical Physics in Europe. Hence there will be special sessions on training and education in Medical Physics.

The vicinity with Pisa and its international airport will allow the participants to this event to take advantage of the many airplane connections worldwide, with numerous low-cost carriers. The monuments of Pisa certainly deserve a thorough visit. The Mediterranean Sea is only 10 km away from Pisa and a refreshing swim in its warm waters would suggest a longer staying than just for the three days of the meeting.

I am looking forward to welcome you at the EFOMP PISA 2007 Congress.

Alberto Del Guerra
President of the Congress



First European Conference on Medical Physics

PROGRAM OUTLINE

Thursday, September 20

- 15:00 - 16:30 OP Opening Session (*Auditorium*)
- 17:00 - 19:00 PL1 Plenary Session 1 - EFOMP Symposium: Education and Training in Medical Physics in Europe (*Auditorium*)
- 19:00 - 20:00 P1 Poster Session 1- Physics in Radiotherapy and Radioprotection (*La Cavalla Storna*)

Friday, September 21

- 08:30 - 10:30 PL2 Plenary Session 2 - Nuclear Medicine Physics: 50+ Years of PET (*Auditorium*)
- 11:00 - 13:00 PL3 Plenary Session 3- ESMRMB Symposium: New Emerging Technologies in MRI: Research and Safety Issues (*Auditorium*)
- 15:00 - 18:30 T1#1 Track 1.1 - Special Symposium: Safety and Efficacy of CT (*Sala Cordati*)
- 15:00 - 18:30 T2#1 Track 2.1 - Nuclear Medicine and Molecular Imaging (*Sala Pascoli*)
- 15:00 - 18:30 T3#1 Track 3.1 - Radiotherapy and Protontherapy (*Sala Congressi*)
- 18:30 - 19:30 P2 Poster Session 2 - Physics in Nuclear Medicine, Molecular Imaging and Medical Imaging (*La Cavalla Storna*)
- 20:30 Congress Dinner

Saturday, September 22

- 08:30 - 12:00 T1#2 Track 1.2 - Diagnostic Radiology with IR and Computed Tomography (*Sala Cordati*)
- 08:30 - 12:00 T2#2 Track 2.2 - Medical Imaging and Magnetic Resonance Imaging (*Sala Pascoli*)
- 08:30 - 12:00 T3#2 Track 3.2 - Brachytherapy and Dosimetry (*Sala Congressi*)
- 12:00 - 13:00 P3 Poster Session 3 - Physics in Diagnostic Radiology, Physiological Measurements Education and Training in Medical Physics (*La Cavalla Storna*)
- 15:00 - 17:00 T4#1 Track 4.1 - Education and Training in Medical Physics (*Sala Cordati*)
- 15:00 - 17:00 T5#1 Track 5.1 - Physiological Measurements (*Sala Pascoli*)
- 15:00 - 17:00 T1#3 Track 1.3 - Diagnostic Radiology with IR and Dosimetry (*Sala Congressi*)
- 17:00 - 17:30 CL Closing Ceremony (*Auditorium*)

SCIENTIFIC COMMITTEE

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PROGRAM

OP Opening Session

Thursday, Sep. 20 15:00-16:30, Auditorium

Session Chairs: Alberto Del Guerra, *University of Pisa, Italy*

Wolfgang Schlegel, *DKFZ, Germany*

OP-1 (15:00) Welcome Addresses

Awards: EFOMP Honorary Membership

W. Schlegel, *DKFZ, Germany*

Awards: Galileo Galilei Award in Medical Physics

A. Del Guerra, *University of Pisa, Italy*

OP-2 (15:30, invited) Combating Cancer in the Third Millennium - The Contribution of Medical Physics

S. Webb, *Institute of Cancer Research and Royal Marsden NHS Foundation Trust, UK*

16:30 Break

PL1 Plenary Session 1 - EFOMP Symposium: Education and Training in Medical Physics in Europe

Thursday, Sep. 20 17:00-19:00, Auditorium

Session Chairs: Stelios Christofides, *Nicosia General Hospital, Cyprus*

Teresa Eudaldo, *Hospital de Sant Pau, Spain*

PL1-1 (17:00, invited) Mission, Structure and Tasks of EFOMP

W. Schlegel, *DKFZ, Germany*

On behalf of the EFOMP

PL1-2 (17:10, invited) The Present Status of Medical Physics Education and Training in Europe: an EFOMP Survey

T. Eudaldo, *Hospital de la Santa Creu i Sant Pau, Spain*

On behalf of the EFOMP

PL1-3 (17:30, invited) Strengthening Cooperation Between the NMO's and EFOMP ETP Committee

M. Wasilewska-Radwanska

AGH University of Science and Technology, Krakow, Poland; EFOMP ETP Committee Chair, Poland

PL1-4 (17:40, invited) The EFOMP Activities in the Field of Continuous Professional Development and Accreditation Schemes

K. J. Olsen, *University Hospital Herlev, Denmark*

On behalf of the EFOMP

PL1-5 (17:50, invited) EFOMP European Union Affairs Committee Initiatives for 2007 - 2009

E. Guibelalde, *Universidad Complutense, Spain*

On behalf of the EFOMP

PL1-6 (18:00, invited) Ways of EFOMP to Communicate

M. Buchgeister, *Medizinische Physik, Germany*
On behalf of the EFOMP

PL1-7 (18:10, invited) EFOMP New Initiatives and Activities
S. Christofides, *EFOMP Officer, Cyprus*
On behalf of the EFOMP

PL1-8 (18:20, invited) Future Goals of EFOMP in Education, Profession and Science
W. Schlegel, *DKFZ, Germany*
On behalf of the EFOMP

PL1-9 (18:35, invited) Challenges in Teaching Medical Physics in Radiology and Radiation Oncology Residency Programs and in Graduate Medical Physics Programs in the US
H. W. Mower, *Lahey Clinic Medical Center, US*

P1 Poster Session 1- Physics in Radiotherapy and Radioprotection

Thursday, Sep. 20 19:00-20:00, La Cavalla Storna
Session Chair: Giacomo Cuttone, *INFN LNS, Italy*

Physics in Radiotherapy

P1-1 Dose Calculation Due to a I-125 Source Model 6711 and Dosimetry Parameters Determination in the Water and Soft Tissue Phantoms
A. A. Mowlavi, *Tarbiat Moallem University of Sabzevar, Iran*; A. Binesh, *Payam Noor University of Fariman, Iran*; E. Mokhtari-nejad, *Payam Noor University of Mashhad, Iran*

P1-2 Prostate IMRT: Calculation of Dynamic Rectal NTCP Based on Motion of the Rectum, Rectal Wall Variability and Rectum Deformation
G. N. Grigorov, *R. Barnett, Grand River Regional Cancer Center, Canada*; J. Chow, *Princess Margaret Hospital, Canada*

P1-3 MAESTRO: Methods and Advanced Equipment for Simulation and Treatment in Radio Oncology
G. Cuttone¹, R. Cirio¹, P. Lojacono¹, S. Iliescu¹, F. Marchetto¹, M. Bucciolini², G. Biti², C. Talamonti², L. Livi², V. Viti³, S. Onori³, C. De Angelis³, J. Barthe⁴, R. Hugon⁴, C. Greco⁵, I. V. Patti⁵, D. Lefkoupoulos⁶, A. Isambert⁴
¹INFN, Italy; ²University of Florence, Italy; ³Istituto Superiore di Sanità, Italy; ⁴CEA, France; ⁵REM Radioterapia, Italy; ⁶Istituto Gustave Roussy, France

P1-4 An Analysis of an Implantable MOSFET Dosimeter for Radiation Therapy Applications
S. Modarres Razavi
Chalmers University of Technology, Sweden

P1-5 Verification of the Dose Calculation System IMAGINE for Providing Benchmark X-Ray Therapy Doses Through Computer Networks
K. Saito^{1,2}, E. Kunieda^{3,2}, Y. Narita^{4,2}, A. Myojoyama^{5,2}, H. Saitoh^{5,2}
¹Japan Atomic Energy Agency, Japan; ²Japan Science and Technology Agency, Japan; ³Keio University, Japan; ⁴Kyoto

P1-6 Assessment of the Lifetime Cancer Mortality Risk to Children Undergoing Radiotherapy for Supra-Diaphragmatic Hodgkin's Disease.

A. Tzedakis, M. Mazonakis, S. Kachris, E. Lyrarakis, J. Stratakis, E. Petinelly, A. Fasoulaki, H. Varveris

University Hospital, Greece

P1-7 The INFN Contribution to European Project MAESTRO: Quality Assurance Protocol for a Clinical Proton Beam Line

G. P. Biti¹, A. Blondain², M. Bucciolini¹, R. Cirio³, G. A. P. Cirrone³, G. Cuttone³, S. Giordanengo³, N. Givehchi³, S. P. Iliescu³, P. A. Lojaco³, F. Marchetto³, C. Peroni³, L. Raffaele³, M. G. Sabini³, L. M. Valastro³

¹DFC University of Florence, Italy; ²IBA, Belgium; ³Istituto Nazionale di Fisica Nucleare, Italy

P1-8 Radiotherapy Treatment Planning & Verification: Our Experience Inside a Film Less Hospital

A. Torresin, M. G. Brambilla, C. Carbonini, B. Ferrari, C. Mainardi, V. Parini, G. Pedroli, S. Pilon, G. Milanese, G. Origgi, M. Ciboldi, D. Asnaghi, V. Arienti, M. Botturi

Ospedale Niguarda Milano, Italy

P1-9 Monte Carlo Simulation of a Leksell Gamma Knife Clinical Treatment

G. Russo¹, R. Barbera², G. Cuttone¹, R. Foroni³, E. Giorgio⁴, V. Mongelli¹, F. Romano^{1,2}, M. G. Sabini^{1,5}

¹Laboratori Nazionali del Sud, Italy; ²University of Catania, Italy; ³Gamma Knife Centre, Italy; ⁴Istituto Nazionale di Fisica Nucleare, Italy; ⁵Cannizzaro Hospital, Italy

P1-10 Dose Volume Histogram Evaluation of Different Techniques in Breast Irradiation, Using Several Calculation Algorithms

A. L. N. M. Luís¹, M. J. Rosa², K. Jacob², C. Marcelino¹, A. Soares¹, A. Pereira¹, C. Dias¹, L. Madureira², S. Oliveira², M. Sousa², M. Ramalho³, P. Ferreira^{3,4}, N. Teixeira^{3,5}

¹Hospital Nossa Senhora do Rosário, Portugal; ²Hospital CUF Descobertas, Portugal; ³ESTeSL-IPL, Portugal; ⁴Sociedade Portuguesa de Radiologia e Medicina Nuclear, Portugal; ⁵FCM-UNL, Portugal

P1-11 Comparative Dosimetric Study of 3 Different Gastric Cancer Radiotherapy Techniques

A. Serna, M. Porras, J. D. Palma, B. Tobarra

Hospital Virgen de la Arrixaca, SPAIN

P1-12 Correlation Between Therapeutic Dose and Induced Activity During Emission of the High-Energy Therapeutic Linear Accelerator Beams

K. Polaczek-Grelík, A. Konefał, W. Zipper

Institute of Physics, University of Silesia, Poland

P1-13 Comparison of MOSFET and Diode Detectors for in Vivo Dosimetry in Electron Beam Treatments

N. Jornet¹, P. Carrasco¹, M. Enmark², C. Pino¹, I. Méndez¹,

T. Eudaldo¹, M. Ribas¹

¹Hospital de la Santa Creu i Sant Pau, Spain; ²Finsencenter. Copenhagen University Hospital, Denmark

P1-14 Quality Assurance in Intensity Modulated Radiation Therapy (IMRT) - Discussion of Results

J. Winiecki, K. Majewska, T. Morgas, B. Drzewiecka
Oncology Center Bydgoszcz, Poland

P1-15 Investigation on Integral Dose with BrainSCAN™ Intensity Modulated Radiation Therapy Module

A. D'Angelo, M. Benassi, G. Evangelisti, S. Arcangeli, S. Gomellini, V. Bruzzaniti, A. Soriani, L. Strigari
Regina Elena National Cancer Institute, Italy

P1-16 Experimental Dosimetry of ¹²⁵I Brachytherapy Seed (Model 6711) with a Portable Device Based on CdTe Detector

M. Quattrocchi^{1,2,3}, E. Lorenzini¹, A. Lazzari¹
¹Az. USL2, Italy; ²Universita' degli Studi di Pisa, Italy; ³Instituto Nazionale di Fisica Nucleare, Italy

P1-17 Investigation of Electron Contamination Effect in the Dose Distribution of Photon Beam Using Monte Carlo Method

F. Haryanto, R. Widita, I. Arif, S. N. Khotimah, *Institut Teknologi Bandung, Indonesia*; S. Soetopo, S. Susilo, *Hasan Sadikin Hospital, Indonesia*

P1-18 Metal Artifacts: How Much Are They Affecting Proton Dose Distributions?

F. Albertini¹, A. Bolsi¹, C. Ares¹, S. Broggi², G. M. Cattaneo², A. J. Lomax¹
¹Paul Scherrer Institute, Switzerland; ²Ospedale San Raffaele, Italia

P1-19 Proton Physics Validation on GEANT4 Based Particle Therapy Simulator

T. Aso^{1,2}, T. Akagi^{3,2}, T. Nishio^{4,2}, I. Daftari⁵, A. Kimura^{6,2}, S. Kameoka^{4,2}, K. Murakami^{7,2}, T. Sasaki^{7,2}, T. Yamashita²
¹Toyama National College of Maritime Technology, Japan; ²Japan Science and Technology, Japan; ³Hyogo Ion Beam Medical Center, Japan; ⁴National Cancer Center, Japan; ⁵UC San Francisco, USA; ⁶Ashikaga Institute of Technology, Japan; ⁷High Energy Accelerator Research Organization, Japan

P1-20 Boron Neutron Capture Therapy for Early Stages Breast Cancer Using Inter-Cavity Balloon Brachytherapy

A. Mehdizadeh, *Mashhad University of Medical Sciences, Iran*; A. Fazelzadeh, *Fasa University of Medical Sciences, Iran*

P1-21 Mega -Voltage Cone Beam Quality Assurance - a Complete QA Program Developed and Implemented at Kantonsspital Aarau

E. Fujak, G. Lutters, *State Hospital Aarau AG, Switzerland*

P1-22 Grid Based Telemedicine Application for Monte Carlo Dosimetric Studies

L. Maigne¹, A. Fessy¹, M. Diarena¹, C. Thiam¹, D. Donnarieix², V. Breton¹
¹Assistant Professor, France; ²Medical Physicist, France

P1-23 The Use of Correction Factors in Absolute Beta-Dosimetry

with Radiochromic Film

D. Aragno¹, M. C. Pressello², M. Pacilio², R. Rauco², S. D'Onofrio³,
L. Bianciardi¹, E. Santini²

¹S. Giovanni-Addolorata Hospital, Italy; ²S. Camillo Forlanini Hospital, Italy; ³Tor Vergata Hospital, Italy

P1-24 Dynamic IMRT at the Radiotherapy Department of the IPOFG-EPE Lisbon: TPS Validation and IMRT QA with Film Dosimetry (Chemical and Self Developing Film), Portal Dosimetry and 2D Array Dosimetry

P. M. Ferreira, C. V. Souto, J. J. Carvalho, M. F. Ramalho, M. A. Roldão

Instituto Português de Oncologia Francisco Gentil-E.P.E., Lisbon, Portugal

P1-25 An EPID Dose-Response Study for IMRT QA

R. Figueira, M. Trindade, Hospital de S. João, Portugal

Radioprotection

P1-26 Radiation Protection of Patients During LGK Treatments.

J. Novotny, J. Semnicka

Medical Physics Dept. Na Homolce Hospital, Prague, Czech Rep.

P1-27 The Management of Nuclear Medicine Patients and Radioprotection Problems in Relation to the New International Recommendations

A. A. Russo, Institute of biomedical engineering- CNR,

Italy; R. Delia, University Roma Tor Vergata, Italy; M. Casale, Azienda Ospedaliera Santa Maria, Italy

P1-28 Dosimetric Evaluation Between Dedicated Workers Operating in Nuclear Medicine and PET/CT Department

K. Dalianis¹, J. Malamitsi², L. Gogou¹, R. Efthimiadou¹, J. Andreou¹, E. Gergiou², V. Prassopoulos¹

¹DTCA Hygeia, Greece; ²Medical School University of Athens, Greece

P1-29 Workplace Monitoring Systems - Dose Analysis

M. T. Rézio, S. Cristóvão, M. R. Vieira

IPOLFG, EPE, Portugal

P1-30 Radiation Protection and Shielding of PET Cyclotron Facilities; Comparison of Theoretical Evaluations and Experimental Evidences

G. Cuttone¹, G. Russo¹, M. G. Sabinì^{1,2}, A. Guasti³, P. Saletti³, I. Løvik⁴, P. Guarino⁵, E. Tomarchio⁵

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P1-31 Estimations of Organ Doses on X-Ray CT Imaging Used in PET/CT Examinations

K. Akahane, K. Nishizawa, S. Ko, K. Fujii, National Institute of Radiological Sciences, Japan; K. Iwai, Nihon University School of Dentistry, Japan; S. Wada, Niigata University, Japan

P1-32 A Study of Feasibility of Dose Reduction in Pediatric MSCT Scanning with a Constant Image Quality

G. Zatelli¹, A. Ciccarrone², C. Fonda², S. Mazzocchi¹
¹Azienda Sanitaria di Firenze, Italia; ²A.O.U. Meyer, Italia

P1-33 Reference Levels at European Level for Cardiac Interventional Procedures

R. Padovani¹, E. Vano², A. Trianni¹, C. Bokou³, H. Bosmans⁴, J. Jankowski⁵, D. Bor⁶, A. Dowling⁷, V. Tsapaki⁸, J. Vassileva⁹, K. Faulkner¹⁰

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P1-34 Shielding Evaluation for Radiotherapy Facilities When IMRT and Stereotactic Radiosurgery Procedures Contribute

L. Madureira¹, S. Brás², N. Teixeira^{3,4}

¹Hospital Cuf Descobertas, Portugal; ²Clínica de Radioterapia e Medicina Nuclear do Algarve, Portugal; ³ESTeSL-IPL, Portugal; ⁴FCM-UTL, Portugal

P1-35 Medical Staff Radiation Exposure During Endoscopic Retrograde CholangioPancreatography (ERCP)

A. Mehdizadeh^{1,2}, M. T. Bahreyni toossi², A. Fazelzadeh³

¹Shiraz University of Medical Sciences, Iran; ²Mashhad University of Medical Sciences, Iran; ³Fasa University of Medical Sciences, Iran

P1-36 Radiation Doses to Patients and Cardiologists from Permanent Cardiac Pacemaker Implantation Procedures

A. Mehdizadeh^{1,2}, A. Fazelzadeh³, M. M. Movahedi²

¹Mashad University of Medical Sciences, Iran; ²Shiraz University of Medical Sciences, Iran; ³Fasa University of Medical Sciences, Iran

P1-37 Determination of the Absorbed Doses in Shanks of Interventional Radiologists

N. Golnik, K. Szczepanski, Warsaw University of Technology, Poland; B. Obryk, Institute of Nuclear Physics, Poland

PL2 Plenary Session 2 - Nuclear Medicine Physics: 50+ years of PET

Friday, Sep. 21 08:30-10:30, Auditorium

Session Chair: Thomas Beyer, University Hospital Essen, Germany

PL2-1 (08:30, invited) The Promise of New Detectors

M. Khodaverdi, Centre de Physique de Particules de Marseille (CPPM), France

PL2-2 (09:10, invited) The Promise of New Image Reconstruction

A. J. Reader, The University of Manchester, UK

PL2-3 (09:50, invited) The Demise of a Promise: Status and Future Perspective of Nuclear Medicine Technology

K. P. Schäfers, University of Münster, Germany

PL3 Plenary Session 3- ESMRMB Symposium: New Emerging Technologies in MRI: Research and Safety Issues

Friday, Sep. 21 11:00-13:00, Auditorium
Session Chair: Klaas Pruessmann, *ETH and University Zurich, Switzerland*

10:30 Break

PL3-1 (11:00, invited) Technical Challenges and Opportunities of Whole Body MRI at 3 Tesla

J. Machann, *University of Tuebingen, Germany*

PL3-2 (11:30, invited) Prospects of Human MRI at 7 Tesla

K. Pruessmann, *ETH and University Zurich, Switzerland*

PL3-3 (12:00, invited) Safety Issues in MR Installations

D. G. Norris, *F.C Donders Centre for Cognitive Neuroscience, Netherlands*

PL3-4 (12:30, invited) MR-PET: Combining Molecular Function and Morphology

B. Pichler, *University of Tuebingen, Germany*

T1#1 Track 1.1 - Special Symposium: Safety and Efficacy of CT

Friday, Sep. 21 15:00-18:30, Sala Cordati
Session Chair: Willi Kalender, *University Erlangen-Nuernberg, Germany*

T1#1-1 (15:00, invited) Introduction to the "Special Symposium: Safety and Efficacy of CT"

W. Kalender, *University Erlangen-Nuernberg, Germany*

T1#1-2 (15:10, invited) Technical Dose Descriptors for CT

Y. Kyriakou, *University Erlangen-Nürnberg, Germany*

T1#1-3 (15:35, invited) Patient Dose Assessment by Measurements and Calculations

J. Damilakis, *University of Crete, Greece*

T1#1-4 (16:00, invited) Reference Dose Levels and Patient Dose Data for CT in Europe

P. Shrimpton, *Health Protection Agency, UK*

16:30 Break

T1#1-5 (17:00, invited) Technical Approaches to the Optimisation of CT

W. Kalender, *University Erlangen-Nuernberg, Germany*

T1#1-6 (17:25, invited) Clinical Approaches to the Optimisation of Pediatric CT

C.-P. Wallner, *Ludwig-Maximilians University, Germany*

T1#1-7 (17:50, invited) Justification of the Use of CT

J. Geleijns, *Leiden University Medical Center, The Netherlands*

T2#1 Track 2.1 - Nuclear Medicine and Molecular Imaging

Friday, Sep. 21 15:00-18:30, Sala Pascoli

Session Chair: Cesare Gori, Azienda Ospedaliero-Universitaria Careggi, Italy

T2#1-1 (15:00) SPECT Detector Sensitivity and Resolution

H. Wieczorek, A. Goedicke

Philips Technology Research Laboratories, Germany

T2#1-2 (15:18) Ultra-High Resolution SPECT with CdTe Detectors

K. Ogawa, N. Ohmura, M. Muraishi, *Hosei University, Japan*

T2#1-3 (15:36) First Results of Small Animal Imaging SPECT Detector for Cardiovascular Disease Studies on Mice

M. L. Magliozzi, *INFN Roma gruppo collegato Sanità, Italy*;

M. Ballerini, E. Cisbani, S. Colilli, R. Fratoni, F. Garibaldi, F. Giuliani, M. Gricia, M. Lucentini, F. Santavenere, S. Torrioli, P. Veneroni, *Istituto Superiore di Sanità, Italy*; S. Majewski, *Jefferson Lab, USA*; S. P. G. Mok, B. M. W. Tsui, Y. Wang, *Johns Hopkins University, USA*; R. Accorsi, *The Children's Hospital, USA*

T2#1-4 (15:54) MediSPECT/FRI:a New Radionuclide/Optical Scanner for Small Animal Imaging

M. C. Montes^{1,2}, A. Lauria^{1,2}, G. Mettivier^{1,2}, P. Russo^{1,2}

¹*Università degli Studi di Napoli, Italy*; ²*Istituto Nazionale di Fisica Nucleare, Italy*

T2#1-5 (16:12) Characterization of a New Gamma Camera for the Sentinel Lymph Node Procedure in Clinical Environment

V. Bekaert¹, S. Salvador¹, C. Mathelin², J.-L. Guyonnet¹

¹*CNRS/IN2P3 - IPHC, France*; ²*CHRU, France*

16:30 Break

T2#1-6 (17:00) Pre-Treatment Verification by Positron Emission Tomography:

C. Caldera, J. E. Assentoft, J. Carl

Aalborg hospital, Denmark

T2#1-7 (17:18) RPC-PET: A New Technology for Human and Animal PET

M. Couceiro^{1,2}, A. Blanco¹, N. C. Ferreira³, R. F. Marques^{1,4},

P. Fonte^{1,2}, L. Lopes¹

¹*LIP - Laboratório de Física Experimental de Partículas, Portugal*;

²*ISEC - Instituto Superior de Engenharia de Coimbra, Portugal*;

³*IBILI - Instituto Biomédico de Investigação da Luz e Imagem, Portugal*; ⁴*Faculdade de Ciências e Tecnologia da Universidade de Coimbra, Portugal*

T2#1-8 (17:36) Toward PET/MR Using Silicon Photomultipliers

A. J. Lucas¹, R. C. Hawkes¹, J. W. Stevick¹, G. Llosa^{2,3},

S. Marcatili^{2,3}, C. Piemonte⁴, A. Del Guerra^{2,3}, T. A. Carpenter¹

¹*University of Cambridge, UK*; ²*University of Pisa, Italy*; ³*Sezione di Pisa, Italy*; ⁴*Fondazione Bruno Kessler-irst, Italy*

T2#1-9 (17:54) Estimating the Scatter Fraction of Small-Animal PET

S. Schneider^{1,2}, A. M. Fulterer^{1,3}, S. Weber¹, T. M. Buzug⁴

¹Forschungszentrum Juelich, Germany; ²RheinAhrCampus Remagen, Germany; ³Technical University of Graz, Austria; ⁴University of Luebeck, Germany

T2#1-10 (18:12) Modelling Coincidence Sorting Strategies for Singles List-Mode Data in Small Animal PET

J. F. Oliver, M. Rafecas, IFIC (U. Valencia- CSIC), Spain

T3#1 Track 3.1 - Radiotherapy and Protontherapy

Friday, Sep. 21 15:00-18:30, Sala Congressi

Session Chair: Steve Webb, Royal Marsden, UK

T3#1-1 (15:00) Helical Tomotherapy: QA Program for Prostate Total Treatment Time

G. N. Grigorov¹, T. Kron², G. Bauman³, J. Chow⁴, L. Grigorov⁵, G. Rodrigues³, E. Yu³, J. Battista³, J. Van Dyk³

¹Grand River Regional Cancer Center, Canada; ²Peter MacCallum Cancer Centre, Australia; ³London Regional Cancer Program, Canada; ⁴Radiation Medicine Program, Canada; ⁵School of Computing, Canada

T3#1-2 (15:18) The MIRaS (Medical Image Radiotherapy and Simulation) C++ Radiotherapy Simulation Module.

J. I. Lagares, J. D. Soler, P. Arce, G. Pereira, M. Embid CIEMAT, Spain

T3#1-3 (15:36) Heavy Element Enhanced Synchrotron Stereotactic Radiotherapy as a Promising Brain Tumour Treatment

J.-F. Adam, M.-C. Biston, J. Rousseau, C. Boudou, A. Joubert, A.-M. Charvet, F. Estève, J. Balosso, H. Elleaume

Institut National de la Santé et de la Recherche Médicale INSERM, France

T3#1-4 (15:54) The Real Time Monitor System for the Italian National Centre for Oncological Hadrontherapy (CNAO)

M. A. Garella¹, A. Attili¹, F. Bourhaleb^{2,3}, R. Cirio¹, M. Donetti^{1,3}, S. Giordanengo¹, N. Givehchi^{1,2}, S. Iliescu², A. La Rosa¹,

F. Marchetto¹, J. Pardo¹, A. Pecka^{1,2}, C. Peroni^{1,2}, M. Pezzetta³

¹Istituto Nazionale Fisica Nucleare (INFN), Italy; ²Dipartimento di Fisica Sperimentale, Italy; ³Fondazione CNAO, Italy

T3#1-5 (16:12) A Compact Linac for Intensity Modulated Proton Therapy Based on a Dielectric Wall Accelerator*

G. J. Caporaso¹, T. R. Mackie^{2,3}, S. E. Sampayan¹, Y.-J. Chen¹, D. T. Blackfield¹, J. R. Harris¹, S. A. Hawkins¹, C. L. Holmes¹,

S. D. Nelson¹, A. C. Paul¹, B. R. Poole¹, M. A. Rhodes¹,

D. M. Sanders¹, J. S. Sullivan¹, L.-F. Wang¹, J. A. Watson¹,

P. J. Reckwerdt², R. Schmidt², D. W. Pearson², R. W. Flynn³,

D. L. Matthews⁴, J. A. Purdy⁴

¹Lawrence Livermore National Laboratory, USA; ²TomoTherapy Incorporated, USA; ³University of Wisconsin, USA; ⁴University of California Davis Cancer Center, USA

16:30 Break

T3#1-6 (17:00) A Filtering Approach to Calculate the Dose Distribution in Proton Radiotherapy from in Situ PET Activation

F. Attanasi^{1,2}, N. Belcari^{1,2}, M. Camarda^{1,2}, A. Del Guerra^{1,2},
V. Rosso^{1,2}, S. Vecchio^{1,2}, N. Lanconelli³, G. A. P. Cirrone⁴,
F. Di Rosa⁴, G. Russo⁴

¹University of Pisa, Italy; ²Branch of Pisa, Italy; ³University of Bologna, Italy; ⁴LNS, Italy

T3#1-7 (17:18) Effects of Residual Positioning Errors on Proton Dose Distributions

A. Bolsi, F. Albertini, A. J. Lomax, E. Hug

Paul Scherrer Institut, Switzerland

T3#1-8 (17:36) Readout Electronics for a Proton Tomography Apparatus

D. Menichelli^{1,2}, L. Capineri¹, C. Civinini², N. Randazzo^{3,2},
M. Ruzzo^{3,2}, V. Sipala^{3,2}, A. Fucile^{3,2}, D. Lo Presti^{3,2}, M. Tesi⁴,
S. Valentini¹

¹Università di Firenze, Italy; ²INFN, Italy; ³Università di Catania, Italy; ⁴CNR, Italy

T3#1-9 (17:54) Heavy Ions Fragmentations Measurements at Intermediate Energies in Hadrontherapy and Spatial Vehicles Shielding

C. Agodi¹, L. Calabretta¹, G. Cardella², G. A. P. Cirrone¹,
G. Cuttone¹, F. Fiorini^{3,4}, P. Lojacono¹, M. C. Morone^{4,5},
M. de Napoli⁶, G. Raciti^{6,2}, E. Rapisarda⁶

¹INFN - Laboratori Nazionali Del Sud -, Italy; ²INFN - Sezione di Catania, Italy; ³Università di Roma Tor Vergata, Italy; ⁴INFN - Sezione di Tor Vergata, Italy; ⁵Università di Roma Tor Vergata, Italy; ⁶Università di Catania, Italy

T3#1-10 (18:12) Monte Carlo Simulation of the Contamination of Carbon Ions Beams for Hadrontherapy Delivered by Cyclotron

M. C. Morone, Università di Roma Tor Vergata and INFN, Sezione di Roma Tor Vergata, Italy; C. Agodi, L. Calabretta, G. A. P. Cirrone, G. Cuttone, INFN - LNS, Italy; F. Fiorini, Università di Roma Tor Vergata and INFN Sezione di Roma Tor Vergata, Italy

P2 Poster Session 2 - Physics in Nuclear Medicine, Molecular Imaging and Medical Imaging

Friday, Sep. 21 18:30-19:30, La Cavalla Storna

Session Chair: Michela Tosetti, IRCCS Stella Maris, Italy

Physics in Nuclear Medicine

P2-1 Study of Finding DOI by the Single-End Readout of Pr: LuAG Scintillator

S. Kobayashi¹, K. Kamada^{1,2}, Y. Usuki², H. Ogino³, A. Yoshikawa¹
¹Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan; ²Material Research Laboratory, Furukawa Co. Ltd., Japan; ³School of Engineering, University of Tokyo, Japan

P2-2 Assessment of Radioactive Contamination in Waiting Rooms in Nuclear Medicine Centers of Tehran; Two or One Waiting Rooms?

M. Salouti¹, F. Saghatchi², H. Rajabi¹

¹Tarbiat Modares University, Iran; ²Medical Sciences University of Zanjan, Iran

P2-3 Influence of Collimator Shape and Misalignment in the CdZnTe Semiconductor Gamma-Camera System

K. Ogawa, Y. Saito, A. Ohta, *Hosei University, Japan*; K. Shuto, N. Motomura, H. Kobayashi, *Toshiba Medical Systems, Japan*; S. Makino, *Toshiba Corporation Power Systems Company, Japan*; T. Nakahara, A. Kubo, *Keio University, Japan*

P2-4 Optimization of the Patient Injected Dose in Two Different Systems: a GSO PET Scanner and an Integrated System PET/TC

M. G. Sabini^{1,2}, G. Cuttone², P. Di Raimondo³, F. Di Rosa^{1,2}, M. Ippolito¹, V. Mongelli^{1,2,4}, S. Pittera^{1,2,4}, G. Russo^{1,2,4}, F. Scopelliti¹
¹Cannizzaro Hospital, Italy; ²Laboratori Nazionali del Sud, Istituto Nazionale di Fisica Nucleare, Italy; ³MEDIPASS SPA, Italy; ⁴Scuola di Specializzazione in Fisica Sanitaria, Italy

P2-5 Calibration Factor for Activity Measurement of ¹⁸⁸Re with a Widely Used Model of Radionuclide Activity Meter

M. Marengo¹, L. Uccelli², G. Cicoria³, M. Pasquali², M. Gambaccini², A. Duatti³

¹University Hospital "S.Orsola - Malpighi", Italy; ²University of Ferrara, Italy; ³University of Bologna, Italy

P2-6 Dynamic Heart Phantom for the Quality Control of SPECT Equipment

K. Matusiak, M. Wasilewska-Radwanska, *AGH University of Science and Technology, Faculty of Physics and Applied Computer Science, Krakow, P, Poland*; A. Stepień, *5th Military Clinical Hospital, Poland*

P2-7 Evaluation of Radiation Exposure and Image Quality Using Anatomically Modulated and Fixed Tube Current in Whole Body PET-CT.

R. Prasad, *Tata Memorial Hospital, Mumbai, India*

P2-8 Thyroid I-131 Uptake Measurement Using Scintillation Probe and Planar Gamma Camera

K. Matusiak¹, M. Wasilewska-Radwanska¹, A. Stepień², J. Pawlus², D. Kruk¹, O. Kraft³

¹AGH University of Science and Technology, Faculty of Physics and Applied Computer Science, Krakow, P, Poland; ²5-th Clinical Military Hospital, Poland; ³University Hospital, Czech Republic

P2-9 Optimisation of Administered Dose Level in Brain Perfusion Imaging with ^{99m}Tc-HMPAO via Image Analysis

A. P. Stefanoyiannis¹, P. A. Kaplanis², S. Christofides², X. Geronikola-Trapali¹, I. Armeniakos¹, S. N. Chatziioannou¹, A. Prentakis¹, E. Efstathopoulos¹, A. Gouliamos¹

¹School of Medicine, University of Athens, Greece; ²Nicosia General Hospital, Cyprus

P2-10 Basic Information about the First 30 Static Kidney Scintigraphies Using Gamma Camera in the Clinical Center of Montenegro - Podgorica

I. Aligrudic, *Clinical Center of Montenegro, Montenegro*; N. Antovic, *University of Montenegro, Faculty of Natural Sciences and Mathematics, Montenegro*

P2-11 A Fast Monte Carlo I-131 Imaging Using a Variance Reduction Technique

H. R. Khosravi, S. Srakar, A. Takavar, *University of Tehran/Medical Sciences, Iran*; M. Nazifi, *Shiraz University, Iran*; M. Shahriari, *Shahid Beheshti, Iran*

P2-12 Calibration of I-131 Dose Calibrators Routinely Used in Nuclear Medicine Departments

S. Tastan, N. O. Kucuk, E. Ibis, E. Turkoglu, K. M. Kir, *Ankara University Medical faculty, TURKEY*; A. A. Soyulu, *MONRLOL Nuclear Co., TURKEY*

P2-13 SPECT Contrast and Sensitivity Performances of Elscint, General Electric, Siemens and SMV Multi-Heads Cameras

A. Seret, M. Kirkove, *University of Liege, Belgium*

P2-14 MediPROBE: a Compact Gamma Camera for Sentinel Lymph Node Imaging

A. S. Curion^{1,2}, A. Lauria^{1,2}, G. Mettivier^{1,2}, M. C. Montesi^{1,2}, P. Russo^{1,2}

¹Dipartimento di Scienze Fisiche, Italy; ²Sez. di Napoli, Italy

P2-15 Detector Characterization of a Dual-Head SPECT Camera Dedicated to Breast Imaging

M. Camarda^{1,2}, N. Belcari^{1,2}, A. Del Guerra^{1,2}, L. Spontoni^{1,2}, S. Vecchio^{1,2}, P. Bennati³, M. N. Cinti³, R. Pani³, R. Campanini⁴, E. Iampieri⁴, N. Lanconelli⁴

¹University of Pisa, Italy; ²Branch of Pisa, Italy; ³University "La Sapienza", Italy; ⁴University of Bologna, Italy

P2-16 Development of Software and Phantoms for the Quantification of Linearity in a Gamma Camera GE Starcam XR/T

A. L. D. S. Carvalho, C. Pereira, H. Costa, *Hospital S. João, Portugal*; F. J. S. Gomez, *Hospital do Meixoeiro, Espanha*

P2-17 Impact of Read-Out Hardware on Neural Network Performance for Monolithic Scintillator Detectors

P. Bruyndonckx¹, Z. Li¹, C. Lemaitre¹, J. M. Pérez², P. Rato², Y. Wang³, S. Tavernier¹

¹Vrije Universiteit Brussel, Belgium; ²CIEMAT, Spain; ³University of Science and Technology of China, China

Molecular Imaging

P2-18 Metabolomics of Apoptosis and Necrosis in Leukemic HL60 Cells Using 1H-NMR

G. Rainaldi¹, R. Romano², P. Indovina¹, A. Ferrante¹, A. Motta³, P. L. Indovina^{4,5}, M. T. Santini¹

¹Istituto Superiore di Sanità, Italy; ²Università degli Studi di Salerno, Italy; ³Consiglio Nazionale delle Ricerche, Italy; ⁴Università di Napoli, Italy; ⁵CNR-INFN, Italy

P2-19 Molecular Imaging of HRE Activity in MG-63 Spheroids Using Two-Photon Excitation Microscopy

P. Indovina¹, M. Collini², G. Chirico², M. T. Santini¹

¹Istituto Superiore di Sanità, Italy; ²Università degli Studi di Milano, Italy

P2-20 M.E.C.T.: A New Prototype of Multi-Energy X-Ray System for Small Animal Imaging

P. L. Rossi, M. Mariselli, G. Baldazzi, M. Fiaschetti, S. Masetti, *University of Bologna, Italy*; L. Roma, *S.Orsola-Malpighi University Hospital, Italy*; M. Gambaccini, *University of Ferrara, Italy*

P2-21 Monitoring of Jawbone Development in Newborn Rats by Fluorescence Spectroscopy in Vitro

Z. Drzazga, A. Kluczevska-Gałka, A. Chełkowski' *Institute of Physics, University of Silesia, Poland*; M. Kaszuba, *Institute of Stomatology, Poland*

P2-22 Rats Heart Function Measurement Using Dynamic PET

A. E. Spinelli, S. Domenichelli, D. D'Ambrosio, S. Trespidi, C. Nanni, V. Ambrosini, R. Franchi, S. Boschi, R. Zannoli, M. Marengo
Policlinico S. Orsola - Malpighi, Italy

P2-23 Labeling Efficacy of Superparamagnetic Iron Oxide Nanoparticles to Human Stem Cells: Comparison of Ferumoxides, Monocrystalline Iron Oxide, Cross-Linked Iron Oxide (CLIO)-NH₂ and Tat-CLIO

W. K. Moon, M. Song, K. R. Son
Dept. of Radiology Seoul National University Hospital, Korea

P2-24 Preliminary Results for the SiliPET Project: a Small Animal PET Scanner Based on Stacks of Silicon Detectors

N. Auricchio^{1,2}, G. Di Domenico^{1,2}, G. Zavattini^{1,2}, A. Gola^{3,2}, C. Fiorini^{3,2}, M. Frigerio³, G. Ambrosi², M. Ionica²
¹*Università di Ferrara, Italy*; ²*INFN, Italy*; ³*Politecnico di Milano, Italy*

P2-25 CT-Based Attenuation Correction Method for Pre-clinical PET Images. Validation and Tests

D. D'Ambrosio¹, S. España², A. E. Spinelli¹, J. M. Udias², M. Marengo¹
¹*Policlinico S. Orsola-Malpighi, Italy*; ²*Universidad Complutense de Madrid, Spain*

P2-26 Factors Limiting in Diagnosis Accuracy in Lung Micro CT Imaging

K. Leroux, D. Brasse, J.-L. Guyonnet, D. Huss
CNRS/IN2P3-IPHC, France

P2-27 Optimization of BNCT (Boron Neutron Capture Therapy) on Rat Glioma Model by Means of MRI at 7T and Dielectric Spectroscopy.

P. Porcari^{1,2,3}, S. Capuani^{2,3}, T. Gili^{1,2,3}, E. D'Amore⁴, F. S. Pastore¹, R. Campanella⁵, B. Maraviglia^{1,3,6}
¹*University of Rome, Italy*; ²*SOFT-INFN CNR, Italy*; ³*Enrico Fermi Center, Italy*; ⁴*Istituto Superiore di Sanità, Italy*; ⁵*University of Perugia, Italy*; ⁶*IRCCS "Santa Lucia" Foundation, Italy*

Medical Imaging

P2-28 First Developments of a Small Field of View HpXe Detector for Medical Imaging

C. D. R. Azevedo¹, C. A. B. Oliveira¹, A. L. Ferreira¹,

J. F. M. dos Santos², J. F. C. A. Veloso¹

¹University of Aveiro, Portugal; ²University of Coimbra, Portugal

P2-29 High Field MRI: Safety Operational Procedures and Protection Problems in the Use and Management of a 4T Equipment

A. A. Russo, Biomedical Engineering Institute- Italian National Research Council, Italy; R. Delia, Neuro-functional Imaging Laboratory- Trento University, Italy; F. Delia, Quantum Security srl, Italy

P2-30 Optimum Contrast Enhancement of Dental Panoramic Radiographs

K. Ogawa, Hosei University, Japan; T. Yamakawa, Axion Japan, Japan; T. Sue, Knowledge and Technology, Co., Japan

P2-31 CAKE: A Monte Carlo Approach to Fractional Volume Integration in Two-Dimensional NMR Spectroscopy

R. Romano¹, D. Paris², F. Acernese¹, A. Motta², P. L. Indovina³, F. Barone¹

¹Università degli Studi di Salerno, Italy; ²CNR, Italy; ³Università degli Studi di Napoli Federico II, Italy

P2-32 Quantitative Perfusion-Based fMRI Using Continuous Arterial Spin Labeling (ASL) Technique

L. Biagi¹, F. Di Salle², A. Del Guerra², D. C. Alsop³, M. Tosetti¹
¹Stella Maris Scientific Institute, Italy; ²University of Pisa, Italy; ³Beth Israel Deaconess Medical Center and Harvard Medical School, USA

P2-33 Wavelet-Based Thresholding Technique for Noise Reduction in Medical Magnetic Resonance Imaging

T. Schillaci, R. Barraco, M. Brai, A. Lo Casto, F. Sorrentino
Università degli Studi di Palermo, Italy

P2-34 Preliminary Images from an Adaptive Imaging System

R. Longo¹, M. Metaxas², C. Esbrant², S. Pani², H. Schulerud³, T. Rokvic¹, A. Asimidis⁴, D. Cavouras⁵, A. Fant⁶, P. Gasiorek⁶, H. Georgiou⁷, J. Griffiths², G. Hall⁸, J. Jones⁸, J. Leaver⁸, G. Li⁹, D. Machin⁸, N. Mantos⁴, M. Noy⁸, J. M. Ostby³, F. Psomadellis¹⁰, G. Royle², R. Speller², P. F. Van der Stelt⁹, S. Theodoridis⁷, F. Triantis⁴, R. Turchetta⁶, C. Venanzi²
¹University of Trieste & INFN, Italy; ²University College London, United Kingdom; ³SINTEF ICT, Norway; ⁴University of Ioannina, Greece; ⁵CTI, Greece; ⁶Rutherford Appleton Laboratory, United Kingdom; ⁷University of Athens, Greece; ⁸Imperial College, United Kingdom; ⁹Academic Center for Dentistry, Netherlands; ¹⁰ANCO S.A., Greece

P2-35 High-Resolution M-MSGC with Modified Floating-Pad Charge-Division Method

H. Takahashi, Y. Takada, K. Fujita, K. Nishi, H. Niko, Faculty of Engineering, The University of Tokyo, JAPAN; M. Furusaka, Faculty of Engineering, Hokkaido University, JAPAN; H. Toyokawa, Japan Synchrotron Research Institute, JAPAN

P2-36 Functional Liver Evaluation Using Blood-Oxygen Level Dependent (BOLD) Magnetic Resonance Imaging

M. D. Noseworthy^{1,2}, Z. Fan³, A. Elzibak^{1,2}, J. Neadles¹

¹Brain-Body Institute, Canada; ²McMaster University, Canada;

³Northwestern University, USA

T1#2 Track 1.2 - Diagnostic Radiology with IR and Computed Tomography

Saturday, Sep. 22 08:30-12:00, Sala Cordati

Session Chair: Jacob Geleijns, *Leiden University, The Netherlands*

T1#2-1 (08:30) SPID: A New Single Photon Imaging Device

S. Tudisco¹, F. Musumeci^{1,2}, L. Lanzanò^{1,2}, G. Privitera¹,
S. Privitera^{1,2}, A. Scordino^{1,2}, G. Condorelli³, M. Mazzillo³

¹INFN, Italy; ²Università di Catania, Italy; ³ST-Microelectronics, Italy

T1#2-2 (08:48) Local K-Edge Tomography with Energy-Sensitive Photon Counting Detectors

E. Roessl, G. Martens, R. Proksa, J.-P. Schlomka

Philips Research Europe - Hamburg, Germany

T1#2-3 (09:06) A Method to Determine the End Point of Diagnostic X-Ray Beams by Using Single Photon Counting Pixel Detectors

C. Carpentieri^{1,2}, M. G. Bisogni¹, A. Del Guerra¹, P. Delogu¹,
M. E. Fantacci¹, J. Fogli^{1,2}, A. Marchi³, V. Marzulli³, V. Rosso¹,
A. Stefanini¹, A. Tofani³

¹Dipartimento di Fisica - Università di Pisa e INFN sezione di Pisa, Italy; ²Università di Pisa, Italy; ³U.O. di Fisica Sanitaria - Azienda Ospedaliera 6 di Livorno, Italy

T1#2-4 (09:24) Angular Tube Current Modulation in X-Ray Computed Tomography: Additional Noise or Dose Reduction by Taking the Dose per Single Projection into Account

M. van Straten, M. Kachelriess, P. Deak, W. A. Kalender

Friedrich-Alexander-University Erlangen-Nuremberg, Germany

T1#2-5 (09:42) Synchrotron Radiation Quantitative Computed Tomography: Performances for Clinical Trials and Comparison with Conventional CT

E. Kerboul¹, H. Elleaume¹, P. Coan², L. Porra³, F. Esteve¹,
J.-F. Adam¹

¹Institut National de la Santé et de la Recherche Médicale INSERM, France; ²European Synchrotron Radiation Facility (ESRF), France;

³University of Helsinki, Finland

10:00 Break

T1#2-6 (10:30) 64 Slice MDCT Generally Underestimates Coronary Calcium Scores as Compared to EBT: A Non-Moving Phantom Study

M. J. Greuter¹, H. Dijkstra¹, J. M. Groen¹, R. Vliegthart¹,
W. De Lange², K. Renema², G. De Bock¹, M. Oudkerk¹

¹University Medical Center Groningen, The Netherlands;

²University Medical Center St Radboud, The Netherlands

T1#2-7 (10:48) Advantages of a Collimation and Detection Mask for Applications in Computed Tomography

H. de las Heras¹, O. Tischenko¹, H. Schlattl¹, Y. Xu², C. Hoeschen¹

¹GSF - Research Centre for Environment and Health, Germany;

²University of Oregon, USA

T1#2-8 (11:06) Comparison of Image Quality in Dual-Energy X-Ray CT Filtered Back-Projection Versus Maximum-Likelihood-Based Iterative Reconstruction

S. Zander¹, M. Grass¹, M. M. Morlock², R. Proksa¹, E. Roesl¹, A. Ziegler¹

¹Philips Research Europe - Hamburg, Germany; ²Technical University Hamburg-Hamburg, Germany

T1#2-9 (11:24) Automated Detection of Lung Nodules in Low-Dose and Thin-Slice Computed Tomography

A. Retico, INFN, Italy

On behalf of the MAGIC-V Collaboration

T1#2-10 (11:42) Effect of a Computer-Aided Detection Prototype on Observer-Performance in the Detection of Lung Nodules on Multi-Detector Row CT-Low Dose Scans: Using Jackknife-ROC and JAFROC Metrics

P. L. Ordóñez¹, S. Canitano², G. Vallati², L. Bogoni³, F. Quagliani¹, M. Crecco², M. Benassi¹, S. Giunta²

¹Istituti Fisioterapici Ospitalieri, Italy; ²Istituti Fisioterapici Ospitalieri-Istituto Regina Elena, Italy; ³Siemens Medical solutions USA, Inc., USA

T2#2 Track 2.2 - Medical Imaging and Magnetic Resonance Imaging

Saturday, Sep. 22 08:30-12:00, Sala Pascoli

Session Chair: Paolo Russo, University of Napoli, Italy

T2#2-1 (08:30) Anger Cameras Based on Silicon Drift Detectors

C. Fiorini^{1,2}, A. Gola^{1,2}, R. Peloso^{1,2}, P. Lechner³, L. Strueder⁴

¹Politecnico di Milano, Italy; ²INFN Sezione di Milano, Italy; ³PNSensor GmbH, Germany; ⁴MPI für Extraterrestrische Physik, Germany

T2#2-2 (08:48) First experiments for positron autoradiography with a silicon pixel detector

A. Lauria^{1,2}, G. Mettivier^{1,2}, M. C. Montesi^{1,2}, P. Russo^{1,2}

¹Università di Napoli, Italy; ²INFN, Italy

T2#2-3 (09:06) Imaging for Biological Studies with Neutrons Produced by Radiotherapeutic Linacs

D. Bolognini, V. Mascagna, A. Mattera, C. Perboni, M. Prest, S. Scazzi, Università degli Studi dell'Insubria & INFN sez. Milano Bicocca, Italy; A. Mozzanica, Università degli Studi di Brescia & INFN sez. Pavia, Italy; V. Conti, Università degli Studi di Milano & INFN sez. Milano, Italy; P. Cappelletti, M. Frigerio, S. Gelosa, A. Monti, A. Ostinelli, Fisica Sanitaria, Ospedale S. Anna di Como, Italy; G. Giannini, E. Vallazza, Università degli Studi di Trieste & INFN sez. Trieste, Italy

T2#2-4 (09:24) Multispectral Imaging and Classification of Pigmented Skin Lesions: the Experience at the Istituto Nazionale Tumori of Milan

M. Carrara, S. Tomatis, A. Bono, A. Colombo, M. Lualdi, R. Marchesini

Fondazione IRCCS Istituto Nazionale Tumori, Italy

T2#2-5 (09:42) Transcranial Magnetic Stimulation Patterns in Heterogeneous Brain Tissue: Focality, Reproducibility and True Sham Stimulation

N. Toschi, M. Guerrisi, *Sezione di Fisica Medica, Dip. di Biopatologia, Facoltà di Medicina, Università Tor Vergata, Roma, Italy*; T. Welt, M. E. Keck, *Psychiatrische universitaetsklinik Zuerich, Switzerland*

10:00 Break

T2#2-6 (10:30) Nuclear Magnetic Resonance Relaxation in Bone

P. Fantazzini
Physics Department, University of Bologna, Italy

T2#2-7 (10:48) The Transition Phase Method for MRI Mean SAR Measurement

R. Romano¹, F. Acernese¹, P. L. Indovina², F. Barone¹
¹*Università degli Studi di Salerno, Italy*; ²*Università degli Studi di Napoli Federico II, Italy*

T2#2-8 (11:06) Spatially Varying Absorptive or Scattering Inclusions in a Diffusive Slab: A Perturbation Approach to the Time-Resolved Transmittance

R. Esposito, *Università di Napoli, Italy*; S. De Nicola, *Istituto di Cibernetica del C.N.R. "E. Caianiello", Italy*; M. Lepore, *Seconda Università di Napoli, Italy*

T2#2-9 (11:24) Identification of Intratumour Low Frequency Microvascular Components via BOLD Signal Fractal Dimension Mapping

G. Wardlaw^{1,2}, M. D. Noseworthy^{1,2}
¹*Brain-Body Institute, Canada*; ²*McMaster University, Canada*

T2#2-10 (11:42) Unsupervised Hippocampus Segmentation Through Deformable Registration

A. Chincarini, *INFN - Genova, Italy*
On behalf of the Magic-5 Collaboration

T3#2 Track 3.2 - Brachytherapy and Dosimetry

Saturday, Sep. 22 08:30-12:00, Sala Congressi
Session Chair: Marta Bucciolini, *University of Florence, Italy*

T3#2-1 (08:30) 3D Image Guided Brachytherapy

S. Devic, M. Evans, E. B. Podgorsak, T. Vuong
Montreal General Hospital, McGill University, Canada

T3#2-2 (08:48) Prostate-Cancer Detection and Staging by Prostatic Zinc Mapping

M. Cortesi, S. Shilstein, R. Chechik, A. Breskin, *Weizmann Institute of Science, Israel*; D. Vartsky, *Soreq NRC, Israel*; G. Raviv, J. Ramon, A. Volkov, E. Fridman, *Sheba Medical Center, Israel*; E. Moriel, M. Huszar, *Kaplan Medical Center, Israel*

T3#2-3 (09:06) Protocol and Procedure Definition for Clinical Validation of Dosimeters in IMRT

M. Bucciolini, F. Banci Buonamici, L. Marrazzo, C. Talamonti, *Università di Firenze, Italia*; C. De Angelis, S. Onori, *Istituto*

Superiore di Sanità, Italia; G. Cuttone, P. Lojacono, Istituto Nazionale di Fisica Nucleare, Italia

T3#2-4 (09:24) Sliding Window IMRT: Dose Rate and Leaf Velocity Limitations

G. N. Grigorov¹, N. Yazdani¹, D. Markel², J. Chow², L. Grigorov³, R. Barnett¹

¹*Grand River Regional Cancer Center, Canada;* ²*Radiation Medicine Program, Canada;* ³*School of Computing, Canada*

T3#2-5 (09:42) New Implantable MOSFET Detectors for in Vivo Dosimetry During Radiotherapy of Extracranial Targets Using the Cyberknife

P. Scalchi¹, A. Pacheco², C. Cavedon¹, C. Kmety-Stevenson², P. Francescon¹, M. E. Masterson-McGary², S. Cora¹

¹*Azienda U.L.S.S. 6, ITALY;* ²*NCH Regional Cancer Institute, USA*

10:00 Break

T3#2-6 (10:30) Early-Breast Cancer Intraoperative Radiation Therapy with Mobile LINAC: Retrospective Evaluation of Dose near the Target-Lung Shields Interface

M. Catalano, S. Andreoli, R. Moretti, A. Personeni, G. Gritti, M. Källi, M. Merson, G. D'Aloia, A. Paludetti, P. Fenaroli
Ospedali Riuniti di Bergamo, Italy

T3#2-7 (10:48) Effect of Gamma Irradiation on the Light Polarization Variation of PMMA Polymer

M. Namedanian, Z. Sanjabi, S. M. R. Aghamiri
Shahid Beheshti University, Iran

T3#2-8 (11:06) Fricke Gel-Layer Dosimetry for Dose Verification in Radiotherapy

M. Carrara¹, G. Gambarini², R. Marchesini¹, M. Valente², S. Tomatis¹

¹*Fondazione IRCCS Istituto Nazionale Tumori, Italy;* ²*Università degli Studi, Italy*

T3#2-9 (11:24) Dose Deposition Verification of Cell Irradiation Using Radiochromic Film

N. Tomic¹, M. Gosselin¹, J. F. Wan², U. Saragovi¹, E. B. Podgorsak², M. Evans², S. Devic²

¹*Jewish General Hospital, McGill University, Canada;* ²*Montreal General Hospital, McGill University, Canada*

T3#2-10 (11:42) S-Values at the Voxel Level for Beta Emitters Calculated with MCNP4C Monte Carlo Code

M. Pacilio¹, L. Montani², S. D'Onofrio³, E. Santini¹

¹*S. Camillo-Forlanini Hospital, Italy;* ²*S. Giovanni-Addolorata Hospital, Italy;* ³*Policlinico Tor Vergata, Italy*

P3 Poster Session 3 - Physics in Diagnostic Radiology, Physiological Measurements, Education and Training in Medical Physics

Saturday, Sep. 22 12.00-13:00, La Cavalla Storna

Session Chair: Maria Giuseppina Bisogni, *University of Pisa, Italy*

Physics in Diagnostic Radiology

P3-1 An Optimisation and Evaluation of Computed Radiography for Use in Chest Imaging: A Comparative Study with Film-Screen Radiography

M. Borg, *Mater Dei Hospital, Malta*

P3-2 Cardiology Doses: Measurements and Calculations

D. M. Bor, E. Onal, T. Olgar, A. Caglan, T. Toklu
Ankara University Institute of Nuclear Science, Turkey

P3-3 Comparison of Patient Dose from Imaging Protocols for Dental Implant Planning Using 16- and 64-Slice CT

L. Moro, *Salvatore Maugeri Foundation, Italy*; P. Mancosu, *School of Specialization in Medical Physics, University of Milan, Italy*; A. Milatovic, *European School of Advanced Studies in Nuclear and Ionising Radiation Technologies, University Institute of Advanced Studies, Italy*

P3-4 System Design for Coherence Properties Estimation of X-Ray Beams

T. Alieva¹, M. J. Bastiaans², M. Chevalier¹, E. Guibelalde¹
¹*Universidad Complutense de Madrid, Spain*; ²*Technische Universiteit Eindhoven, The Netherlands*

P3-5 Manipulation of DICOM Images: Search of a Visualization and Manipulation Environment for the Generation of Hybrid Images

G. Prieto, M. Chevalier, E. Guibelalde
Universidad Complutense de Madrid, Spain

P3-6 Motion Artifacts in Coronary Artery Calcium Determination on Multi-Detector and Dual Source Computed Tomography and Electron Beam Tomography

M. J. Greuter, L. J. Nicolai, R. Vliegthart, M. Oudkerk
University Medical Center Groningen, The Netherlands

P3-7 Results of the Quality Control of Displays and Monitors for Digital Mammography

J. J. Morant¹, M. Chevalier², P. Morán², M. Salvadó¹, M. López¹
¹*Universitat Rovira i Virgili, Spain*; ²*Universidad Complutense de Madrid, Spain*

P3-8 An Automatic Routine Software for Measuring the MTF from the Point Spread Function in CT Scanner

I. Løvik, *Università degli Studi di Firenze, Italy*; A. Taddeucci, C. Gori, *Azienda Ospedaliero-Universitaria Careggi, Italy*

P3-9 An Alternative Hypothesis for dB/dt Measurements in NMR

G. Vermiglio¹, M. G. Tripepi¹, F. Campanella², G. Aciri¹, B. Testagrossa¹
¹*University of Messina, Italy*; ²*I.S.P.E.S.L., Italy*

P3-10 Measurements of Dose Area Product Vs. Kerma in a Water Phantom

K. Kisielwicz¹, A. Truszkiewicz², S. Wach³, K. Matusiak⁴, M. Wasilewska-Radwanska⁴, M. Budzanowski⁵, M. Waligorski^{1,5}
¹*Centre of Oncology Maria Skłodowska - Curie Memorial Institute Krakow Branch, Poland*; ²*Regional Hospital No 2, Poland*; ³*Radcard s.c. Company, Poland*; ⁴*AGH University of Science and Technology,*

Poland; ⁵Institute of Nuclear Physics Polish Academy of Science, Poland

P3-11 Detection of Respiratory Motion in Fluoroscopic Images Using Mutual Information

T. Moser¹, J. Biederer², S. Nill¹, G. Remmert¹, R. Bendl¹

¹German Cancer Research Center (DKFZ) Heidelberg, Germany;

²University Hospital Schleswig-Holstein, Germany

P3-12 Using DICOM Services as Radiological Auditing Tool

J. I. Ten¹, J. M. Fernández^{1,2}, E. Guibelalde², E. Vano^{1,2}

¹Hospital Clínico San Carlos, Spain; ²Universidad Complutense, Spain

P3-13 The SENTINEL Project

K. Faulkner, Regional Director of Quality Assurance,

UK; J. Malone, St James's Hospital, Ireland; E. Vano,

Complutense University, Spain; R. Padovani, S Maria Della

Misericordia, Italy; H. P. Busch, Institute of Radiology,

Germany; J. (. Zoetelief, Delft University of Technology,

Netherlands; H. Bosmans, University Hospital of Leuven, Belgium

P3-14 Breast Cancer Segmentation by Means of Wavelet Analysis and Morphological Operators

A. Mencattini, M. Salmeri, R. Lojacono, S. Romano, G. Rabottino

Univ. Rome, Italy

P3-15 Noise Estimation in Mammographic Images for Adaptive Denoising

A. Mencattini, M. Salmeri, R. Lojacono, M. Arnò

Univ. Rome, Italy

P3-16 FPGA Implementation of a Fast Hardware Architecture for Medical Digital Image Processing

M. Salmeri, S. Bertazzoni, F. Martini, A. Mencattini

Univ. Rome, Italy

P3-17 Development of a 512-Channel Module for Digital X-Ray Imaging Systems with SSD

L. Ramello, Università del Piemonte Orientale and INFN,

Alessandria, Italy; F. Prino, I.N.F.N., Italy; P. Grybos, P. Maj,

K. Swientek, R. Szczygiel, AGH University of Science and

Technology, Italy; L. Bolanos, A. E. Cabal, CEADEN, Cuba

P3-18 Theoretical and Experimental Investigation of the Detective Quantum Efficiency (DQE) of LSO:Ce Powder Scintillator for X-Ray Mammography Applications

C. Michail¹, S. David¹, A. Toutounzis¹, N. Kalivas², I. Valais^{1,2},

G. Panayiotakis¹, I. Kandarakis²

¹University of Patras, Greece; ²Technological Educational Institute (TEI) of Athens, Greece

P3-19 Luminescence Efficiency of LYSO:Ce, LSO:Ce, GSO:Ce and BGO Single Crystal Scintillators under X-Ray Imaging Conditions

I. Valais^{1,2}, C. Michail¹, S. David¹, A. Konstantinidis¹, D. Cavouras¹,

C. Nomicos², G. Panayiotakis¹, I. Kandarakis²

¹University of Patras, Greece; ²Technological Educational Institute (TEI) of Athens, Greece

P3-20 Investigating the Effect of K-Fluorescence Emission for Scintillators Containing Two Heavy Elements Using Monte Carlo Methods

A. Konstantinidis, P. Liaparinis, G. Panayiotakis, *University of Patras, Greece*; I. Kandarakis, *Technological Educational Institute (TEI) of Athens, Greece*

P3-21 Automatic Exposure Control Performance of the Digital Mammographic Systems

P. Moran, M. Chevalier, *Universidad Complutense de Madrid, Spain*; J. J. Morant, M. Lopez, *Universitat Rovira i Virgili, Spain*

P3-22 Correction of Magnetic Resonance Spectra by Artifact in Single Voxel Sequences.

A. Ciccarone, *Università di Firenze, Italia*; G. Belli, *AOU Careggi, Italia*; C. Fonda, *AOU Meyer, Italia*

P3-23 Dosimetric Study of the Examinations of Cardio MSCT in Phantoms and Adult Patients of Different Morphology

J. Geleijns, *Leiden University Medical Center, The Netherlands*; M. Salvadó, M. López, *Rovira i Virgili University, Spain*; A. Calzado, *Complutense University, Spain*

P3-24 Digital Mammography: Practical Aspects of the Optimisation of AEC for Full Field Digital Detectors

N. Oberhofer¹, N. Paruccini², E. Moroder¹
¹General Hospital, Italy; ²Hospital "S. Gerardo", Italy

Physiological Measurements

P3-25 Wavelet Analysis of the Human Electroretinogram

R. Barraco, L. Bellomonte, M. Brai
University of Palermo, Italy

P3-26 Hyperbaric Oxygenation Effects on Skin Determined by Thermal Imaging

Z. Drzazga, A. Cholewka, M. Maciejewicz, *A. Chetkowski' Institute of Physics, University of Silesia, Poland*; M. Kawecki, G. Kniefel, B. Szymańska, *Burn Treatment Center, Poland*

P3-27 Quality Control & Acceptance Test for Doppler Ultrasound: Procedure Optimization

C. D'Ambrosio^{1,2}, A. M. Di Nallo¹, L. Strigari¹, V. Bruzzaniti¹, M. Benassi¹
¹"Regina Elena" Cancer Institute, Italy; ²INFN-LNF, Italy

P3-28 EBCT-Detected Changes of Lung Aeration Comparing Augmented and Pressure Controlled Ventilation

W. Recheis, C. Hoermann, M. Verius, R. Huttary, D. Zur Nedden
Medical University Innsbruck, Austria

P3-29 Use of Thermography for Evaluation of Skin Prick Test Results

E. Rokita, T. Rok, G. Tatoń
Jagiellonian University Medical College, Poland

P3-30 Functional Cerebral Activity and Connectivity Explored by Intracerebral Electroencephalogram

S. Donadio¹, B. Canesi², A. Schenone², S. Squarcia¹, L. Nobili³,

F. Cardinale³, F. De Carli⁴

¹Department of Physics, University of Genoa, Italy; ²DIST, University of Genoa, Italy; ³Niguarda Ca'Granda Hospital, Italy; ⁴National Research Council, Italy

P3-31 An Experimental Framework to Assess Peripheral Arterial Elasticity

M. Guerrisi, I. Vannucci, A. Canichella, N. Toschi
Sezione di Fisica Medica, Dip. di Biopatologia, Facoltà di Medicina, Università Tor Vergata, Roma, Italy

P3-32 An Optical Flow Field Approach to in Vivo Automatic Measurement of Ciliary Beat Frequency

G. De Nunzio¹, A. Castellano¹, M. Gelardi², P. Burlizzi¹
¹Università del Salento, Italy; ²Clinica Otorinolaringoiatrica II, Università-Policlinico di Bari, Italy

Education and Training in Medical Physics

P3-33 The Geant4 European Medical User Organization: G4EMU

G. A. P. Cirrone, G. Cuttone, F. Di Rosa, G. Russo, Laboratori Nazionali del Sud - Istituto Nazionale di Fisica Nucleare, Italy; A. Heikkinen, Helsinki Institute of Physics, Finland

P3-34 The Biomedical Physics Laboratory Practical Curriculum for Medical and Healthcare First Cycle Students at the Faculty of Medicine, Masaryk University, Brno - Present State and Future Directions

V. Mornstein¹, C. J. Caruana², D. Vlk¹
¹Faculty of Medicine, Masaryk University, Czech Republic; ²Institute of Health Care, University of Malta, Malta

P3-35 Structure and Early Experience of a Spanish Master on Biomedical Physics Adapted to the European Higher Education Area

F. Arqueros, J. M. Miranda, M. Sancho, A. Calzado, E. Guibelalde
Universidad Complutense, SPAIN

P3-36 AIFM School in Medical Physics "Piero Caldirola": Experience of Continuing Education

A. Torresin¹, A. Crespi¹, M. Bucciolini², P. Feroldi¹, A. Formiconi², C. Marchetti¹, P. Indovina¹, A. Pilot¹, M. Stasi¹
¹Medical Physics, Italy; ²Clinical Pathophysiology, Italy

T4#1 Track 4.1 - Education and Training in Medical Physics

Saturday, Sep. 22 15:00-17:00, Sala Cordati
Session Chair: Alberto Torresin, Azienda Ospedaliera Niguarda, Italy

T4#1-1 (15:00) The Development of Safety Management Systems in the Netherlands

H. J. Van Kleffens, TU/e and Elkerliek Hospital, Netherlands
On behalf of the School for Medical Physics and Engineering/
Eindhoven

T4#1-2 (15:18) Challenges of a New Master Programme in Radiation Sciences for Oncology (EMPIRION)

N. Machado, N. Teixeira, M. Eiras, G. Cunha, P. Ferreira, Escola

Superior Tecnologia da Saúde de Lisboa, Portugal; G. Heeren, EMPIRION CONSORTIUM, Belgium; B. Mijnheer, I. Bruinvis, T. Roding, Hogeschool INHOLLAND, Holland; W. Enghardt, S. Pieck, Technische Universität Dresden, Germany; D. Georg, C. Kirisits, Medizinische Universität Wien, Austria; J. Malicki, M. Bogusz-Osawa, P. Martenka, G. Zwierzchowski, Karol Marcinkowski University of Medical Sciences, Poland

T4#1-3 (15:36) Qualified Medical Engineer: A New Brand of Academic Professional in Health Care

H. C. W. Beijerinck^{1,2}, H. J. Van Kleffens^{1,2}, F. N. Van de Vosse^{1,2}
¹*School of Medical Physics and Engineering Eindhoven, The Netherlands;* ²*Eindhoven University of Technology, The Netherlands*

T4#1-4 (15:54) Medical Physics Master Studies at Novi Sad University (Serbia)

S. M. Stankovic¹, V. M. Spasic Jokic², M. J. Veskovic¹
¹*Faculty of Sciences, University of Novi Sad, Serbia;* ²*VINCA Institute of Nuclear Sciences, Serbia*

T4#1-5 (16:12) Postgraduate Training in Medical Radiological Physics in Bulgaria and Recognition of Medical Physics Expert

J. N. Vassileva
National Centre of Radiobiology and Radiation Protection, Bulgaria

T4#1-6 (16:30) Professional Development and Training of Medical Radiation Physicists in Russia

V. Kostylev
Association of Medical Physicists in Russia, Russia

T5#1 Track 5.1 - Physiological Measurements

Saturday, Sep. 22 15:00-17:00, Sala Pascoli
Session Chair: Romano Zannoli, *University of Bologna, Italy*

T5#1-1 (15:00) Cell Proliferation of a Resistant Melanoma after High Ionizing Radiation

A. M. Ristic-Fira, I. M. Petrovic, L. B. Koricanac, J. Pozega, *Vinca Institute of Nuclear Sciences, Serbia;* L. M. Valastro, F. Di Rosa, P. G. A. Cirrone, G. Cuttone, *INFN - LNS, Italy*

T5#1-2 (15:18) Study of the ESR Signal of Ammonium Tartrate Dosimeters Exposed to Various Radiation Beams

M. Marrale^{1,2}, A. Longo¹, M. Brai^{1,2}, A. Bartolotta^{2,1}
¹*Università di Palermo, Italy;* ²*Unità CNISM, Italy*

T5#1-3 (15:36) Examination of Dependences Between ESR Threshold and MCL Value in Large Patient Population

A. Wasowski¹, T. Palko², A. Lorens¹, A. Walkowiak¹, A. Obrycka¹, H. Skarzynski¹
¹*International Center of Hearing and Speech of the Institute of Physiology and Pathology of Hearing, Poland;* ²*Warsaw University of Technology, Poland*

T5#1-4 (15:54) Diastolic Ventricular Interaction and Respiration in a Thick Shell Model of Cardiac Chambers

M. Guerrisi, N. Toschi, *Università di Roma, ITALY*

T5#1-5 (16:12) Augmentation Index as an Indicator of Aortic Stiffness: Comparison of Different Measurement Techniques.

I. Corazza, E. Tartagni, R. Zannoli
Institute of Cardiology, Italy

T5#1-6 (16:30) Bio-Impedance Measurements for the Gastric Acidity Estimation

A. C. Giouvanoudi, *Technological Educational Institute, Greece*; N. M. Spyrou, *University of Surrey, UK*

T1#3 Track 1.3 - Diagnostic Radiology with IR and Dosimetry

Saturday, Sep. 22 15:00-17:00, Sala Congressi

Session Chair: Keith Faulkner, *Quality Assurance Reference Centre NHS, UK*

T1#3-1 (15:00) Evaluation of the Imaging Performance of a Digital Mammographic Demonstrator Based on GaAs Pixel Detectors

M. G. Bisogni, P. Delogu, M. E. Fantacci, G. Paternoster, V. Rosso, A. Stefanini
University and INF, Pisa, Italy

T1#3-2 (15:18) Mammographic Image Analysis for Tumoral Mass Automatic Classification

A. Mencattini, M. Salmeri, R. Lojacono, G. Rabottino, S. Romano
Univ. Rome, Italy

T1#3-3 (15:36) Digitizing the Radiological Images of a Very Large Area: The Successful Contribution of Medical Physicists to the Florence-Wide Area PACS Implementation.

C. Gori¹, G. Belli¹, B. Lazzari², S. Mazzocchi³, A. Taddeucci¹, G. Zatelli³

¹*Azienda Ospedaliero-Universitaria Careggi, Italy*; ²*Azienda Sanitaria Pistoia, Italy*; ³*Azienda Sanitaria Firenze, Italy*

T1#3-4 (15:54) Organ Dose Measurements on X-Ray CT Examinations among Different Kinds of Apparatuses

S. Ko, K. Nishizawa, K. Akahane, K. Fujii, *National Institute of Radiological Sciences, Japan*; S. Wada, *Niigata University, Japan*; K. Iwai, *Nihon University School of Dentistry, Japan*

T1#3-5 (16:12) Patient Dosimetry in Interventional Cardiology

D. M. Bor¹, T. Olgar¹, R. Padovani², A. Caglan¹, E. Onal¹, T. Toklu¹
¹*Ankara University Institute of Nuclear Science, Turkey*; ²*S. Maria della Misericordia Hospital, Italy*

T1#3-6 (16:30) Improvement of Medical X-Ray Imaging by Nanocrystalline Scintillators

N. V. Klassen, V. V. Kedrov, V. N. Kurlov, S. Z. Shmurak, I. M. Smyt'ko, G. K. Strukova, N. P. Kobelev, E. A. Kudrenko, O. A. Krivko, A. P. Kiselev
Institute of Solid State Physics, Russia

CL Closing Ceremony

Saturday, Sep. 22 17:00-17:30, Auditorium

Session Chair: Alberto Del Guerra, *University of Pisa, Italy*

Awards: selected papers for publication in "Physica Medica - EJMP: Highlights of the EFOMP Congress"

ACKNOWLEDGMENTS

I am very glad to acknowledge the support of the computer and secretarial staff of the Department of Physics of University of Pisa and of INFN, Sezione di Pisa. The EFOMP congress has been organized as part of the unique event that comprises AIFM and EFOMP meeting. Hence the EFOMP congress could not be held without the continuous support and the organization of Italian Association of Medical Physics (AIFM).

The scientific program has been put together with the help and expertise of the EFOMP officers and of all the members of the scientific committee. A particular thanks goes to dr. Giuseppina Bisogni and dr. Lucia Lilli, who have been instrumental in timely organizing this event.

Finally I would also like to acknowledge the official sponsorship of the following institutions and associations;

- University of Pisa
- Department of Physics, University of Pisa
- Faculty of Medicine, University of Pisa
- Istituto Nazionale di Fisica Nucleare (INFN)
- Frontiers Detectors for Frontiers Physics

Alberto Del Guerra
President of the X EFOMP Congress

CONFERENCE PROGRAM TIME TABLE

CONFERENCE PROGRAM TIME TABLE

Thursday September 20, 2007	Auditorium	Sala Cordati	Sala Pascoli	Sala Congressi	La Cavalla Storna
15:00-16:30	OP: Opening Session				
17:00-19:00	PL1: Plenary Session 1 - EFOMP Symposium: Education and Training in Medical Physics in Europe				P1: Poster Session 1- Physics in Radiotherapy and Radioprotection
19:00-20:00					La Cavalla Storna
Friday September 21, 2007	Auditorium	Sala Cordati	Sala Pascoli	Sala Congressi	La Cavalla Storna
08:30-10:30	PL2: Plenary Session 2 - Nuclear Medicine Physics: 50+ years of PET				
11:00-13:00	PL3: Plenary Session 3- ESMRMB Symposium: New emerging technologies in MRI: research and safety issues				
15:00-18:30		T1#1: Track 1.1 - Special Symposium: Safety and Efficacy of CT	T2#1: Track 2.1 - Nuclear Medicine and Molecular Imaging	T3#1: Track 3.1 - Radiotherapy and Protontherapy	
18:30-19:30					P2: Poster Session 2 - Physics in Nuclear Medicine, Molecular Imaging and Medical Imaging
Saturday September 22, 2007	Auditorium	Sala Cordati	Sala Pascoli	Sala Congressi	La Cavalla Storna
08:30-12:00		T1#2: Track 1.2 - Diagnostic Radiology with IR and Computed Tomography	T2#2: Track 2.2 - Medical Imaging and Magnetic Resonance Imaging	T3#2: Track 3.2 - Brachytherapy and Dosimetry	
12:00-13:00					P3: Poster Session 3 - Physics in Diagnostic Radiology, Physiological Measurements Education and Training in Medical Physics
15:00-17:00		T4#1: Track 4.1 - Education and Training in Medical Physics	T5#1: Track 5.1 - Physiological Measurements	T1#3: Track 1.3 - Diagnostic Radiology with IR and Dosimetry	
17:00-17:30	CL: Closing Ceremony				

**SECOND EUROPEAN CONFERENCE ON
MEDICAL PHYSICS AND ENGINEERING
110 YEARS AFTER THE DISCOVERY OF POLONIUM AND RADIUM**

Krakow, Poland, September 17-21, 2008

This Conference will coincide with the 14th Congress of the Polish Society of Medical Physics and the EFOMP Council and Officer's Meeting, so we expect our meeting to be an important event in European medical physics in the coming year 2008. Within the Second European Conference we will also organise a Workshop Radiation Protection of the Patient.

The conference will be held at the Faculty of Physics and Applied Computer Science of the AGH University of Science and Technology in Krakow, a leading Polish academic and research institution, also in the areas of medical physics and bio-engineering. We welcome you to Krakow most cordially and invite you to respond through our website <http://mpekrak08.ftj.agh.edu.pl> as soon as possible!

Marta Wasilewska-Radwanska
Local Organising Committee Chair
General Secretary Polish Society

Michael P.R. Waligorski
President
Polish Society of Medical Physics of Medical Physics

THE WORLD CONGRESS ON MEDICAL PHYSICS ON BIOMEDICAL ENGINEERING 2009

Organized as a common event of the IOMP, IFMBE, EFOMP and DGMP, the **World Congress on Medical Physics and Biomedical Engineering** will be held in **Munich, Germany, from September 7-12, 2009**. Taking place every three years, the World Congress is a major event where scientists can deepen their knowledge in their own field of expertise and also explore related areas.

Topics of the conference will cover all important area in medical physics as e.g. radiation oncology, diagnostic imaging, radiation protection and dosimetry, biological effects of ionizing and non-ionizing radiation, image processing, biosignal processing, modelling and simulation. Biomedical Engineering themes will be e.g. biomechanics, invasive Interventions, endoscopy and image guided therapy, diagnostic and therapeutic instrumentation, as well as micro and nanosystems in medicine, active implants, and biosensors. Sessions on education, training, accreditation and certification of physics and engineering professionals will complement the programme.

Located at the very heart of Europe, **Germany** has a long tradition of physics and engineering in medicine and medical technology devices. With its fascinating mix of history, culture, recreation and it's cosmopolitan flair, **Munich** makes an ideal choice for the World Congress 2009.

All relevant information on the congress can be found on the website <http://www.wc2009.org>. We look forward to seeing you there in Munich in 2009!

Wolfgang Schlegel

President of EFOMP

Conference President for the Field of Medical Physics