

## MCNP and EGS4 User Group Meeting – April 2005, Birmingham

### Thursday 7<sup>th</sup> April

10:00 Tea/Coffee and registration

#### *Session 1 Radiotherapy Applications (Chair Geraint Lewis)*

**10:30 Matthias Fippel – Monte Carlo dose calculation for inverse treatment planning in intensity modulated radiation therapy**

11:20 Tony Millin, Jason Belec, Geraint Lewis, Frank Verhaegen – Monte Carlo verification of stereotactically guided radiotherapy

11:40 A Shafeai, J A Mills, G Baugh – Monte Carlo investigation of the 25MV photon beam PDD trend for an Elekta SL25 linear accelerator

12:00 Martin Cawley – Experience of using Geant4.x to evaluate a Henscke shielded applicator for selectron LDR

12:30 *IoP Computational Physics Group AGM*

13:00 *Lunch*

#### *Session 2 Neutrons, Targeted and stereotactic techniques (Chair Alan DuSautoy)*

14:00 Andrew Critchley – Determination of neutron fluxes resulting from multi-megavolt flash x-ray and MINAC radiography

14:20 Mohammed Hussien, D T Bartlett, R J Tanner – Using Monte Carlo to optimize a novel design of neutron survey instrument

14:40 Caroline Boudou, Claudio Ferrero, Francois Esteve, Helene Elleaume – Calculation of radiation dose for synchrotron stereotactic radiotherapy of brain tumours

15:00 Fathy Saeedi, Gunaranjan Bose, Richard Hugtenburg – Dosimetry of small radiation fields

15:20 Anna Mason – Use and limitations of MCNP for *in vitro* cell dosimetry

15:40 Cecile Woknecki – Demonstration of NCTPlan – MCNP-based planning software for BNCT

16:00 *Tea*

#### *Session 3 Architectures (Chair Richard Hugtenburg)*

16:20 Mark Foley, Patrick Downes, Andrew Shearer, Wil van der Putten, Margaret Moore – WebCom-G: Stress Testing a Grid Infrastructure using Monte Carlo simulations

**16:40 Neil Drummond – The Quantum Monte Carlo Method**

17:20 *Close of day 1*

19:30 *Conference Dinner*

## Friday April 8<sup>th</sup>

### *Session 1 Proton beam radiotherapy (Chair Craig Edwards)*

09:00 Prof Bleddyn Jones – The future with particle therapies

09:30 David Shipley, Hugo Palmans, Colin Baker and Andrezj Kacperek – GEANT4 simulation of an ocular proton beam and benchmark against other Monte Carlo codes

**10:50 Matthias Fippel – Fast Monte Carlo Dose Calculation for Radiation Therapy with Proton Beams**

10:30 Hugo Palmans- Monte Carlo calculated ionisation chamber perturbation factors in proton beams

*10:50 Coffee*

### *Session 2 Code and algorithm developments (Chair Henry Lawrence)*

**11:20 Jose M Fernandez-Varea – New features in version 2005 of the Monte Carlo code PENELOPE**

12:00 Nedaie H, Mosleh-Shirazi MA, Gharaati H – Comparison of different MCNP Monte Carlo codes

12:20 Richard Hugtenburg and Jose M Fernandez-Varea – Modelling of synchrotron x-rays sources for medical applications

*13:00 Lunch*

### *Session 3 Imaging (Chair Hugo Palmans)*

14:00 Mary Chin, D G Lewis – Recent progress in Monte Carlo portal dosimetry at Velindre Cancer Centre

14:20 Steve Quillin – MCNP calculations and measurements of detector resolution and DQE

14:40 Lester Biddle and Prina Mistry – MCNP5 simulation of a large angle scattering experiment

*15:00 Tea and close of meeting*