Discussion Seminar

Radiation Quality Assessment in Hadrontherapy

*INFN, Laboratori Nazionali di Legnaro*

30-31 October 2006

Organizer: Paolo Colautti - E-mail: Paolo.Colautti@lnl.infn.it
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Discussion Seminar About Radiation Quality Assessment in Hadrontherapy

Legnaro, conference room Claudio Villi, 30-31 October 2006

Therapeutic properties of hadrons are exploited in radiation therapy to treat tumours and other pathologies. Hadrons give rise to mixed radiation fields, the components of which have different biological effects. Microdosimetric measurements of the radiation field can be processed to assess the average biological effectiveness of the field. The main task of the seminar is to discuss the following 2 items:

1. Microdosimetric measurements, heuristic limits and prospects.

The discussion will be introduced by some lectures. All discussion seminar participants, who want to show some slides (possibly no more than three), can show them during the discussion times. In the following, the proposed seminar schedule.
Radiation Quality Assessment in Hadrontherapy
Microdosimetric measurements, heuristic limits and prospects

How to apply for financial support to an experiment by Legnaro Laboratories

Introduction

Radiobiological data and physical radiation quality

Radiobiological characterization of high-LET radiation beams and questions related to their clinical application

Mechanistic and phenomenological models of radiobiological damage

Nanodosimetry, the Visionary Tool of Future Applied Radiation Physics

Quality concept: the multidisciplinary approach of the European network for light ion hadron therapy, ENLIGHT

Evaluation of the effective radiobiological dose of carbon ion beams with the LEM model

Organizer: Paolo Colautti - E-mail: Paolo.Colautti@lnl.infn.it
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Tissue-equivalent proportional counters (TEPCs) in hadrontherapy: possibilities and limits

Graeme Taylor
National Physical Laboratories - UK

Radiation quality, variance-covariance possibilities and limits

Lennart Lindborg
Swedish Radiation Protection Institute – Sweden

Mini TEPCs for measuring radiation quality of hadronic beams

Davide Moro
Laboratori Nazionali Legnaro-INFN - Italy

Microdosimetric Distributions for a Mini-TEPC Due to Photon Radiation

Elisabetta Gargioni
Physikalisch-Technische Bundesanstalt – Germany

A silicon microdosimeter for high-LET radiation

Andrea Pola
Politecnico di Milano - Italy

Radiation quality measurements in BNCT

Juan Esposito
Laboratori Nazionali Legnaro – INFN - Italy

RBE of 7 NCT beams for intestinal crypt regeneration in mice: how to interpret the dispersion of the results?

John Gueulette
Université catholic de Louvain - Belgium

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