

MC-INFN

2020-2021

PARTECIPANTI

- Sezioni partecipanti:
 - **Sezione di Catania**, Prof E Amato
 - Laboratori Nazionali del Sud, Dr L Pandola
 - **Sezione di Ferrara**, Prof V Guidi
 - Sezione di Napoli, Prof P Russo
 - Sezione di Perugia, Dr Behcet Alpat
 - Sezione di Roma I (ISS) Dr B Caccia

- Rapporti con FLUKA e situazione generale
- Book “Monte Carlo for new challenges in ion therapy”

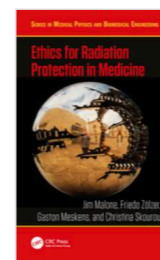


Introduction to Megavoltage X-Ray Dose Computation Algorithms

1st Edition

Jerry Battista
January 02, 2019

Read an exclusive interview with Dr. Jerry Battista here. A critical element of radiation treatment planning for cancer is the accurate prediction and delivery of a tailored radiation dose distribution inside the patient. Megavoltage x-ray beams are aimed at the tumour, while collateral damage to...

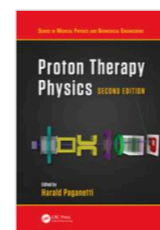


Ethics for Radiation Protection in Medicine

1st Edition

Jim Malone, Friedo Zölzer, Gaston Meskens, Christina Skourou
November 26, 2018

This book presents an up to date ethical framework for radiological protection in medicine. It is consistent with the requirements of the system of radiation protection and with the expectations of medical ethics. It presents an approach rooted in the medical tradition, and alert to contemporary...



Proton Therapy Physics, Second Edition

2nd Edition

Harald Paganetti
November 13, 2018

Expanding on the highly successful first edition, this second edition of Proton Therapy Physics has been completely restructured and updated throughout, and includes several new chapters. Suitable for both newcomers in medical physics and more seasoned specialists in radiation oncology, this book...



[Home](#)
[Our Customers](#)
[Our Products](#)
[Subjects](#)
[Blog](#)

SALE

JUNE SAVER: Save 25% on 2 or more books including eBooks

[View All Book Series](#)

BOOK SERIES

Series in Medical Physics and Biomedical Engineering

About the Series

Monte Carlo for new challenges in ion therapy

Editor:

GAP Cirrone

Istituto Nazionale di Fisica Nucleare - Laboratori Nazionali del Sud

(+) leading author

(*) corresponding author

Table of Contents

1. General

- 1.1. Current physics issues of heavily charged particle therapy
[K PARODI, G DEDES, P CIRRONE]
- 1.2. Current radiobiological issues of heavily charged particle therapy
[DURANTE]
- 1.3. Physics models in Monte Carlo simulations for heavily charged particle therapy
[PANDOLA, IVANTCHENKO]

2. Dosimetry enhancement

- 2.1. Solving range uncertainties with Gamma prompt/charged particle prompt
[PINTO, PATERA]
- 2.2. Macroscopic and microscopic calculation approaches for LET
[CORTESE ET COLL.]
- 2.3. Nuclear Fragmentation in Monte Carlo and validation
[LA TESSA]
- 2.4. Low energy inelastic process in hadrontherapy
[FERRARI, SALA, QUESADA, MANCINI]
- 2.5. Quality assurance with PET
[BISOGLI]

3. Microdosimetry and radiobiology

- 3.1. Monte Carlo and Microdosimetry
[CONTE, PETRINGA, MAGRIN, AGOSTEO, GUATELLI, ROSENFELD]
- 3.2. Monte Carlo to link RBE with radiation quality quantities
[A ATTILI, G PETRINGA, G MAGRO, G RUSSO]
- 3.3. Solving for the contribution of target and projectile fragmentation (mixed fields)
[TOMMASINO, ELETTRA, ATTILI, SCIFONI]

4. Biological enhancement

- 4.1. Nanoparticle Sensitization with Monte Carlo Methods
[MARTINA FUSS, SUSANNA GUATELLI]
- 4.2. Increasing particle therapy biological effectiveness by nuclear reaction-driven binary strategies [CUTTONE, ATTILI, MANTI, (to be confirmed: CHIAPPARA, PETRINGA)]
- 4.3. Solving alpha target issues with Monte Carlo
[GUATELLI]
- 4.4. Experimental and modelling challenges in Flash radiotherapy with Monte Carlo methods
[DARIA BOSCOLO (GSI), Martina Fuss, Walter Tinganelli, Pankaj Chaudary]

5. Quality enhancement

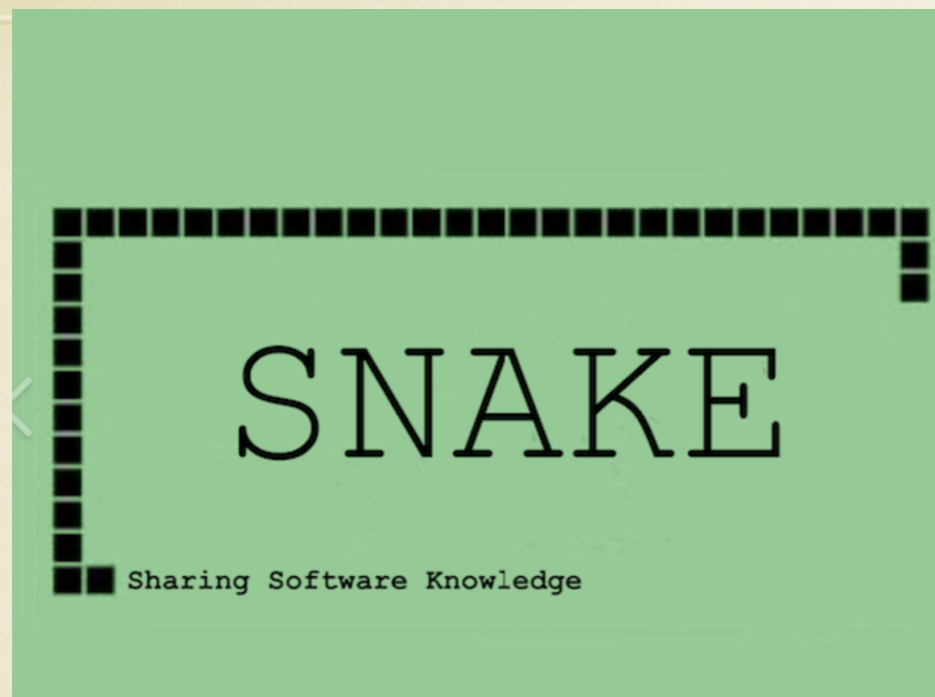
- 5.1. Clinical adaptive therapy (LET, RBE painting)
[NIELSS BASSLER]
- 5.2. Towards Multiple Ion therapy in Particle therapy
[TAKU INANIWA, KRAMER, MAIRANI Scifoni]
- 5.3. Radioactive beams: overview and Monte Carlo studies
[A ROSENFELD, OTHERS]

6. Approaches at nano and chemistry level

- 6.1. Monte Carlo for chemistry
[Janik Plante]
- 6.2. Recent developments in the TRAX particle track structure code
[MICHAEL KRAEMER, SCIFONI]

7. Speed-up MC in charged particle applications

- 7.1. Machine-learning and Monte Carlo: the case of low energy hadronic simulation
[BOCCALI*, C MANCINI]
- 7.2. Speed-up of Monte Carlo for the introduction in the clinic (FRED, FoCa)
[A Schiavi, angelo.schiavi@uniroma1.it]
- 7.3. Monte Carlo and Analytical codes for Dose planning and recalculation: limits and differential advantages
[A MAIRANI]



IX International Geant4 School

October 5 - 9, 2020

4-9 October 2020
INFN Laboratori Nazionali del Sud
Europe/Rome timezone

- SNAKE “ShariNg SoftwAre KnowledgE”
 - No-profit association for workshop/conference/school organisation
- Next Geant4 school
- G4 benchmark recently published

- Prossimi preventivi: luglio 2020
 - Documento da compilare con attività 2020
 - Preventivi 2021
 - FTE
 - Entro fine giugno 2020