Course on Monte Carlo methods in Radiation Therapy, based on the Taylor&Francis book (2013)

Course director: Frank Verhaegen

5-7 October 2016

Venue: University of Maastricht, Maastricht, Netherlands

Register at: http://montecarlo-method-course.weebly.com/

The book can be ordered from: https://www.crcpress.com/Monte-Carlo-Techniques-in-Radiation-Therapy/Seco-Verhaegen/9781466507920

Program

Day 1

PART I Monte Carlo Fundamentals

08.30 - 08.35  Welcome  Frank Verhaegen
08.35 - 09.25  History of Monte Carlo  Alan Nahum
09.25 - 10.05  Basics of Monte Carlo Simulations  Matthias Fippel
10.35 - 11.15  Variance Reduction Techniques  Matthias Fippel
11.15 - 12.00  Applications of Monte Carlo to Radiation Dosimetry: fundamentals  Hugo Bouchard

PART II Application of Monte Carlo Techniques in Radiation Therapy

13.30 - 14.30  Monte Carlo Systems for RT calculations  Pedro Andreo
14.30 - 15.20  Monte Carlo Modeling of External Photon Beams in Radiotherapy, part I  Frank Verhaegen
15.50 - 16.40  Monte Carlo Modeling of External Photon Beams in Radiotherapy, part II  Frank Verhaegen
16.40 - 17.30  Dynamic Beam Delivery and 4D Monte Carlo  Joao Seco

Day 2

PART II Application of Monte Carlo Techniques in Radiation Therapy – continued

08.30 - 09.30  Applications of Monte Carlo to Radiation Dosimetry: detector response  Pedro Andreo
09.30 - 10.20  Monte Carlo Modeling of External Electron Beams in Radiotherapy  Frank Verhaegen
10.50 - 11.40  Patient Dose Calculation and QA  Joao Seco
11.40 - 12.30  Monte Carlo for kilovoltage and Megavoltage Imaging  Emilliano Spezi
14.00 - 14.50  Monte Carlo in radiobiology  Alan Nahum, Frank Verhaegen
14.50 - 15.30  Electrons: Clinical Considerations and Applications  Pedro Andreo
16.00 - 16.50  Photons: Clinical Considerations and Applications  Michael Fix
16.50 - 17.40  Monte Carlo Calculations for Proton and Ion Beam Dosimetry  Hugo Palmans
19.00  Course dinner in the old town of Maastricht

Day 3

PART II Application of Monte Carlo Techniques in Radiation Therapy – continued

08.30 - 09.30  Monte Carlo Methods and Applications for Brachytherapy Dosimetry and Treatment Planning
Brigitte Reniers
09.30 - 10.30  Monte Carlo Calculations for PET and Prompt Gamma-Based Treatment Verification of Ion Beam Therapy  Katia Parodi
11.00 - 11.50  Protons: Clinical Considerations and Applications  Michael Fix
12.00  Closing the course: Frank Verhaegen