



MEDIZINISCHE FAKULTÄT
DER UNIVERSITÄT DUISBURG-ESSEN



Universitätsklinikum Essen



Workshop on the Monte Carlo radiotherapy system PRIMO

Program

With the support of



Event endorsed by



September 20—22, 2017

September 20, 2017:

09:00—09:15 Welcome
Lorenzo Brualla (Universitätsklinikum Essen, Germany)

Session 1: Do we need the Monte Carlo method in the clinical environment?

Chair: Pedro Andreo (Karolinska Institutet, Sweden)

09:15—09:45 The point of view of a clinician
Wolfgang Sauerwein (Universitätsklinikum Essen, Germany)

09:45—10:15 The point of view of a medical physicist
Luca Cozzi (Istituto Clinico Humanitas, Italy)

10:15—10:45 Review of Monte Carlo codes applied to radiation therapy
Lorenzo Brualla (Universitätsklinikum Essen, Germany)

10:45—11:15 Coffee break

Session 2: Algorithms I

Chair: Lorenzo Brualla (Universitätsklinikum Essen, Germany)

11:15—11:45 Moving PRIMO to the cloud
Héctor Miras (University Hospital Virgen Macarena, Spain)

11:45—12:15 Monte Carlo dose calculation of VMAT clinical treatment plans for Novalis TrueBeam STx linac using PRIMO
Alain Sottiaux (CHU Charleroi, Belgium)

12:15—13:30 Lunch

Session 3: Clinical

Chair: Wolfgang Sauerwein (Universitätsklinikum Essen, Germany)

13:30—14:00 Monte Carlo simulation of translational total body irradiation with PRIMO and source 20 of DOSXYZnrc
Karl Löwenich (University Hospital Zurich, Switzerland)

14:00—14:30 Evaluation of clinical plans using PRIMO Dose Planning Method (DPM) for brain and lung metastases
Giacomo Reggiori (Istituto Clinico Humanitas, Italy)

14:30—15:00 Evaluation of the target dose inhomogeneity in breast cancer treatment due to tissutal differences
Antonella Fogliata (Istituto Clinico Humanitas, Italy)

15:00—15:30 Dosimetric evaluation of AAA and Acuros XB algorithms with the PRIMO software in inhomogeneous media
Javier Jiménez (Hospital Universitario Miguel Servet, Spain)

15:30—16:00 Coffee break

Session 4: Dosimetry I

Chair: Luca Cozzi (Istituto Clinico Humanitas, Italy)

16:00—16:30 Accuracy of PRIMO software validated against a reference dosimetry dataset for Varian clinical linear accelerators
Marcelino Hermida (Hospital Universitari Vall d'Hebron, Spain)

16:30—17:00 A Monte Carlo study of Varian Unique linear accelerator using PRIMO software
Sinan Irmak (Acibadem Kayseri Hospital, Turkey)

17:00—17:30 Monte Carlo simulation of 3D-scanner in PRIMO: comparison with experimental data
Ricardo Tortosa (Hospital IMED Elche, Spain)

September 21, 2017:

Session 5: Keynote lecture

Chair: Josep Sempau (Universitat Politècnica de Catalunya, Spain)

09:00—09:45 Monte Carlo simulations in radiotherapy dosimetry
Pedro Andreo (Karolinska Institutet, Sweden)

Session 6: Algorithms II

Chair: Lorenzo Brualla (Universitätsklinikum Essen, Germany)

09:45—10:15 PENELOPE transport parameters for linac simulation
Josep Sempau (Universitat Politècnica de Catalunya, Spain)

10:15—10:45 Monte Carlo simulations of IMRT using PRIMO
Alessandro Esposito (Oncology Institute of Porto, Portugal)

10:45—11:15 Coffee break

Session 7: New version of PRIMO

Chair: *Antonella Fogliata (Istituto Clinico Humanitas, Italy)*

11:15—11:45: The Dose Planning Method code
Josep Sempau (Universitat Politècnica de Catalunya, Spain)

11:45—12:15 Improvements on DPM for PRIMO
Miguel Rodriguez (Centro Médico Paitilla, Panama)

12:15—12:45 What's new in PRIMO
Miguel Rodriguez (Centro Médico Paitilla, Panama)

12:45—14:00 Lunch

Session 8: Dosimetry II

Chair: *Miguel Rodriguez (Centro Médico Paitilla, Panama)*

14:00—14:30 Study of build-up dose region for 6 MV photon beam using PRIMO simulation software
Manta Mahur (Delhi State Cancer Institute, India)

14:30—15:00 Determination of initial parameters of Varian 2100 CD linac electron beams using PRIMO
Reza Maskani (Shahroud University of Medical Sciences, Iran)

15:00—15:30 Radiation dose distribution in functional heart regions—comparison of Acuros XB and PRIMO
Heiko Karle (University Medical Center Mainz, Germany)

15:30—16:00 Coffee break

Session 9: Ask the authors

Chair: *Pedro Andreo (Karolinska Institutet, Sweden)*

16:00—17:30 Participants are invited to ask questions or comment difficulties on PRIMO to its authors. The participants can use slides to facilitate the discussion.
Lorenzo Brualla, Miguel Rodriguez, Josep Sempau

19:00—21:00 Social dinner

September 22, 2017:

Session 10: Teaching the new PRIMO version

Instructors: Lorenzo Brualla, Miguel Rodriguez, Josep Sempau

09:00—10:30 Hands-on session for learning the new features of PRIMO

10:30—11:00 Coffee break

11:00—12:30 Hands-on session for learning the new features of PRIMO

12:30—12:45 Closing remarks

Lorenzo Brualla (Universitätsklinikum Essen, Germany)