Session EG-I:
Electron Interaction Physics/
Electron Transport Mechanics

(Monday, October 23, p.m.)

EG-I/I1
F. Salvat
Analog electron physics: Interaction cross sections
(amc204)

EG-I/O1
D. Liljequist, J. M. Fernandez-Varea
Modelling the generalized oscillator strength for low energy electron or positron scattering
(amc206)

EG-I/O2
A. Jablonski
Role of Electron Simulations in Surface Analysis
(amc212)

EG-I/O3
H. Fitting, J.-Ch. Kuhr
Low Energy Electron Scattering in Solids - a Monte Carlo Approach
(amc145)

EG-I/O4
M. Dapor
Monte Carlo simulation of few keV electrons and positrons penetrating in oxides
(amc205)

EG-I/O5
E. W. Larsen, D. R. Tolar, Jr.
A "Transport" Condensed History Method
(amc230)

EG-I/O6
A.F. Bielajew, F. Salvat
An absolute moment-preserving electron-step transport mechanics scheme
(amc225)

Session EG-II:
Photon Interaction Physics/Applications I

(Monday, October 23, p.m.)

EG-II/I1
J. Hubbell, S. M. Seltzer
A Half-Century of Monte Carlo, from Slide Rule and Mechanical Desk Calculator to the Laptop Supercomputer
(amc017)

EG-II/O1
Y. Namito, H. Hirayama
Comparison of EGS4 and Measurements Regarding K-X-ray and Bremsstrahlung Photons
(amc024)

EG-II/O2
A. Taibi, A. Tartari, M. Gambaccini
EGS4 Modeling of Coherent Scattering in the Biological Context
(amc163)

EG-II/O3
G. Baraldi, E. Casnati, G. Di Domenico, A. Taibi
Implementation of the anomalous dispersion of Rayleigh scattered photons in EGS4 code
(amc175)

EG-II/O4
N. Nariyama
Backscattering from gold irradiated with 15-40 keV photons
(amc026)

EG-II/O5
R. Curado de Silva, M. Hage-Ali, P. Siffert
Monte Carlo Polarimetric Efficiency Simulations for a Single Monolithic CdTe Thick Matrix
(amc133)

EG-II/O6
I. Orion, F. Dilmanian, L. Pena, Z. Zhong, A. Rosenfeld, I Sagi
Simulations for X-Ray Synchrotron Beams Using the EGS4 Code System in Medical Applications
(amc144)

Session EG III:
Applications II

(Tuesday, October 24, a.m.)

EG-III/I1
H. Hirayama
Application of the EGS4 Monte Carlo Code to a Study of Gamma-Ray Buildup Factors
(amc023)

EG-III/O1
J. M. Fernandez-Varea, X. Llovet, E. Benedito, F. Salvat
Simulation of X-ray spectra generated by kilovolt electron bombardment
(amc209)

EG-III/O2
J. Tickner
Particle Transport in Inhomogeneous Media
(amc058)

EG-III/O3
V. Grichine
Fast Simulation of X-ray Transition Radiation in the GEANT4 Toolkit
(amc069)

EG-III/O4
A. Al-Aydarous, P. Darley
Comparison of 106 Ru 'hot particle' depth dose measurements and Monte Carlo calculations
(amc095)

EG-III/O5
R. Jeraj, T. Kron
Simulation of a brachytherapy applicator for skin radiotherapy
(amc113)

EG-III/O6
W. Neubert, W. Enghardt, U. Lehnert, B. Naumann, A. Panteleeva, J. Pawelke
Optimization of a quasi-monochromatic X-ray source for cell irradiations
(amc045)

EG-III/O7
P.Cauwels, W.Mondelaers, P. Lahorte, B. Masschaele
Development of intense spatially extended homogeneous photon fields for multi-disciplinary research around a 15 MeV high-average-power linac
(amc046)

Session EG-IV:
Status of general-purpose codes

(Tuesday, October 24, a.m.)

EG-IV/I1
Y. Peneliau
Electron Photon Shower Simulation in TRIPOLI-4 Monte Carlo Code
(amc087)

EG-IV/O1
I. Kawrakow, D.W.O. Rogers
The EGSnrc System, a status report
(amc103)

EG-IV/O2
O. Krivosheev, N. Mokhov
Status of MARS Electromagnetic Physics
(amc184)

EG-IV/O3
E.C. Selcow, G.W. McKinney
MCNP Capabilities at the Dawn of the 21st Century:Electron-gamma Applications
(amc187)

EG-IV/O4
J. Sempau, J.M. Fernandez-Varea, F. Salvat
Status of PENELOPE
(amc207)

EG-IV/O5
S. Chauvie, V. Grichine, P. Gumplinger, V. Ivanchenko, R. Kokoulin, S.Magni, M. Maire, P. Nieminen, M.G. Pia, A. Rybin, L. Urban
GEANT4 Electromagnetic Physics
(amc219)

EG-IV/O6
A.F. Bielajew, H. Hirayama, Y. Namito, W.R. Nelson
The status of ‘‘The Physics of EGS5" project
(amc229)

EG-IV/O7
A. Fasso, A. Ferrari, P.R. Sala
Electron-photon transport in FLUKA: status
(amc228)

Session EG-V: Generation of Random numbers, variance reduction

(Tuesday, October 24, p.m.)

EG-V/I1
J. Spanier
Random, quasirandom and hybrid methods for transport problems
(amc006)

EG-V/O1
H. Wozniakowski
Quasi-Monte Carlo Algorithms for High Dimensional Integrals
(amc064)

EG-V/O2
M.S. Milgram
On the use of antithetic variates
(amc028)

EG-V/O3
N. Borisov, M. Panin
Adjoint Monte Carlo Simulation of Fixed Energy Secondary Radiation
(amc040)

EG-V/O4
D. Sheikh-Bagheri
Symmetry-based variance reduction applied to 60Co teletherapy unit Monte Carlo simulations
(amc178)

EG-V/O5
N. Borisov, M. Panin
Importance Biasing Quality Criterion Based on Contribution Response Theory
(amc039)

EG-V/O6
V. Moskvin, L. Papiez, T. Tabata, I. Das
Deep electron penetration calculations with the use of the Method of Trajectory Rotation
(amc141)

<u>Session EG-VI:</u>
<u>Applications in Medical Physics, Dose calculation</u>

(Wednesday, October 25, a.m.)

EG-VI/I1
A. F. Bielajew, S. J. Wilderman, S. J. Pollack, J. Sempau, J. M. Moran, L. Liu
The DPM Radiotherapy Treatment Planning Monte Carlo Code: Variance Reduction and Experimental Verification
(amc227)

EG-VI/O1
J. Siebers, P. Keall, R. Mohan
The impact of Monte Carlo dose calculations on intensity modulated radiation therapy
(amc190)

EG-VI/O2
A. Leal, F. Sanchez-Deblado, M. Perucha, M. Rincon, R. Arrans, C. Bernal, E. Carrasco
PC-based process distribution to solve iterative Monte Carlo simulations in physical dosimetry
(amc193)

EG-VI/O3
M. Fippel, M. Alber, M. Birkner, W. Laub, F. Nusslin, I. Kawrakow
Inverse Treatment Planning for Radiation Therapy based on Fast Monte Carlo Dose Calculation
(amc159)

EG-VI/O4
H. Neuenschwander, W. Volken, D. Frei, C. Cris, E. Born, R. Mini
Macro Monte Carlo: Clinical implementation in a distributed computing environment
(amc210)

EG-VI/O5
C.L. Hartmann-Siantar, T. Daly, M.-A. Descalle, D. Garrett, R.K. House, R.S.Walling, C. Chuang, B. Faddegon, J. Pouliot, L. J. Verhey
Status of the PEREGRINE™ Monte Carlo Code System
(amc226)

EG-VI/O6
I. Kawrakow
VMC++, electron and photon Monte Carlo calculations optimized for Radiation Treatment Planning
(amc104)

Session EG-VII: Microdosimetry, track structure, radiobiological modelling

(Wednesday, October 25, a.m.)

EG-VII/I1
B. Grosswendt
The track structures of photons, electrons and a-particles from the point of view of ionization cluster formation
(amc197)

EG-VII/I2
H. Nikjoo
Track structure in molecular radiation biology
(amc217)

EG-VII/O1
M. Terrisol
Analogue Monte Carlo transport to model radiation induced DNA damage
(amc208)

EG-VII/O2
M. Dingfelder
Basic data for track structure simulations:Electron interaction cross sections in liquid water
(amc020)

EG-VII/O3
D. Emfietzoglou
Inelastic cross-section formulae for use in Monte Carlo track structure codes
(amc224)

EG-VII/O4
M. Terrisol
Modelling ultra soft X-ray effects on DNA
(amc198)

EG-VII/O5
R.D. Stewart, R.J. Traub
Radiobiological Modeling in Voxel Constructs. Challenges, Progress, Needs
(amc222)

Session EG-VIII:
Monte Carlo in radiotherapy dosimetry/
Monte Carlo simulation of Medical Accelerators

(Wednesday, October 25, p.m.)

EG-VIII/I1
D.W.O. Rogers
Monte Carlo techniques for primary standards of ionizing radiation and for dosimetry protocols
(amc151)

EG-VIII/O1
R. Nutbrown, S. Duane, D. Shipley, R. Thomas
Absorbed dose conversion factors for Megavoltage photon beams
(amc129)

EG-VIII/O2
P. Mobit, G. Sandison
Is the Spencer-Attix cavity equation applicable for solid state detectors irradiated in megavoltage electron beam?
(amc140)

EG-VIII/O3
A. Trinidade, P. Rodrigues, A. Chaves, M. Lopes, C. Oliviera, L. Peralta
Monte Carlo Simulation of Electron Beams for Radiotherapy – EGS4, MCNP4b and GEANT3 Intercomparison
(amc080)

EG-VIII/O4
I. Gudowska, B. Sorcini
Evaluation of a 50 MeV photon therapy beam from a racetrack microtron using MCNP4B Monte Carlo code
(amc127)

EG-VIII/O5
D. Albers, F. Cremers, M. Todorovic, I. Eggers, R. Schmidt
Energy spectra and dose distributions of a medical linear accelerator simulated with BEAM/EGS4 and MCNP
(amc128)

EG-VIII/O6
A. Leal, F. Sanchez-Deblado, M. Perucha, M. Rincon, R. Arrans, C. Bernal, E. Carrasco
Monte Carlo simulation of an arc therapy treatment by means of a PC distribution model
(amc194)

Session EG-IX: Applications III

(Thursday, October 26, a.m.)

EG-IX/O1
M. A. Misdaq, A. Merzouki, D. Elabboubi, H. Ezzahery
Determination of the gamma-ray dose equivalent at 1 meter from different cylindric unsealed radioactive solution sources in a biological tissue by using Monte Carlo calculations
(amc030)

EG-IX/O2
I. E. Othman, M. W. Charles, P. J. Darley
Beta Dose Measurements and Calculations around 170 Tm Model Hot Particle Using the Monte Carlo Code EGS4 and Thermoluminescence Imaging Photon Detector
(amc047)

EG-IX/O3
J. Rodenas, A. Martinavarro, V. Rius
Analysis of the In uence of the Radial Displacement of the Source in the Simulation of Ge-Detector Calibration Using MCNP Code
(amc075)

EG-IX/O4
O. Sima
Dedicated Monte Carlo Simulation of Germanium Gamma-Spectrometry Detectors
(amc090)

EG-IX/O5
J. Kluson
Monte Carlo Simulations of Photon Fields Characteristics for In-situ Gamma Spectrometry Applications
(amc114)

EG-IX/O6
J.G. Hunt, D. de S. Santos, F.C. da Silva, I. Malatova, S. Foltanova, B.M. Dantas, A. Azeredo
Application of Voxel Phantoms and Monte Carlo Methods to Internal and External Dosimetry
(amc152)

EG-IX/O7
M. Marziani, M. Gambaccini, L. Tavora, A. Taibi
Monte Carlo simulation of mammography X-ray units: a comparison between different electron extensions of the EGS4 code system
(amc181)

EG-IX/O8

L. del Risco Norrlid, C. Ronnqvist, K. Fransson, R. Brenner, L. Gustafsson, F. Edling, S. Kullander

Calculation of the modulation transfer function for the X-ray imaging detector DIXI using MC simulation data

(amc213)

<u>Session EG- X:</u>
<u>Applications IV</u>

(Thursday, October 26, a.m.)

EG-X/O1
J. O'Malley, S.J. Quillin, I. Crotch
Overview of the role of MCNP4B in flash radiographic applications at AWE
(amc109)

EG-X/O2
V. Stary
Comparison of Monte-Carlo simulation and measurement of electron reflection from solids
(amc132)

EG-X/O3
A. Martinez-Davalos, J.M. Lopez-Robles
Low-energy electron response of CsI(Tl) and BGO
(amc138)

EG-X/O4
S. Sawchuk
Monte Carlo Estimate To Improve Photon Energy Spectrum Reconstruction
(amc147)

EG-X/O5
P. Cauwels, W. Mondelaers, B. Masschaele, J. Jolie, T. Materna, S. Baechler
The Development and Optimization of a Monochromatic Bremsstrahlung Source at a 15MeV high-intensity linac
(amc167)

EG-X/O6
L. Sorbier, E. Rosenberg, C. Merlet
Monte Carlo simulations on Rough and Porous Alumina
(amc176)

EG-X/O7
F. Cremers, C. Kausch, D. Albers, M. Todorovic, R. Schmidt
Simulation of the response function of an amorphous silicon flat-panel array
(amc182)

EG-X/O8
E. Daly, H. Evans, F. Lei, S. Magni, R. Nartallo, P. Nieminen, M. G. Pia, P.R. Truscott
Space Applications of the Geant4 Simulation Toolkit
(amc218)

EG-P (Poster Session)
Electron-photon contributed papers

(Tuesday, October 24, p.m.)

EG-P1

Z.-A. Yang, T. Jin

Variation of surface electron states of InP induced by soft X-rays irradiaton

(amc002)

EG-P2

E. Duverger, A. Mishev, R. Isabey, L. Makovicka, J. Stamenov

Introduction of the muonic and Cerenkov Effects in the EGS4 code

(amc003)

EG-P3

B. Perot, J.L. Artaud, B. Chabalier, J. Misraki, Ph. Chagny

Spectrum shape analysis applied to radioactive waste gamma ray spectroscopy

(amc007)

EG-P4

B. Perot, J.L. Artaud, B. Chabalier, H. Toubon

Assessment of a Compton suppression spectrometer for the measurement of medium and high level radioactive waste packages

(amc008)

EG-P5

M.A. Misdaq, A. Merzouki

A new method for studying the transport of gamma photons in various geological materials by combining the SSNTD technique with Monte Carlo simulations

(amc031)

EG-P6

A.D. Oliveira, J.J. Pedroso de Lima

The degradation of the energy of primary photons described through the entropy

(amc032)

EG-P7

A. Spalek, O. Dragoun

Monte Carlo simulation of the conversion electron scattering in targets for the synthesis of superheavy elements

(amc036)

EG-P8

J. Gouriou

Monte Carlo simulations on a 9-node PC cluster

(amc038)

EG-P9
D. Franck, N. M. Borisov, L. Laval
Application of Numerical Phantoms and MCNP Calculation for in vivo calibration
(amc055)

EG-P10
J. Tickner
A Graphical Expert System Interface to EGS4 and MCNP
(amc060)

EG-P11
I. Aubineau-Lanièce, P. Blanco
Local Dosimetry of a Contaminated Wound
(amc063)

EG-P12
N. Cerullo, G. Curzio, G. Daquino, A. Mariani
Use of Monte Carlo Method in Support to Medical Applications of Radiations
(amc066)

EG-P13
M. Rosetti, M. Benassi
Intra-Operative Radiation Therapy optimisation using the Monte Carlo method
(amc068)

EG-P14
J. Tabary, A. Glière
Coupling photon Monte Carlo simulation and CAD software. Application to X-ray Nondestructive Evaluation
(amc072)

EG-P15
S. Gorodkov, A. Moeslang, P.Vladimirov
Calculation of Radiation Dose from Radioactive Vascular Stents. (DPK vs exact MC approach)
(amc077)

EG-P16
M. Rodríguez-Villafuerte, S. Arzamendi, R. Díaz-Perches
Dosimetric Study of a Low Dose Rate Brachytherapy Source
(amc078)

EG-P17
A. Chaves, M.C. Lopes, C. Oliveira, P. Rodrigues, A. Trindade, L. Peralta
Monte Carlo Calculations for Output Factors of Radiosurgery Narrow Beams
(amc079)

EG-P18
V. Cobut, L. Cirioni, J.P. Patau
Electron Transport Simulation in the Range 1 keV - 4 MeV with Purpose of High Resolution Dosimetric Applications
(amc084)

EG-P19
Z. Dian-hui, H. Liu-xing, N. Sheng-li
Shield Optimization for X-rays using M-C method combined with analytical calculation
(amc086)

EG-P20
G. Gualdrini, P. Ferrari, P. Battisti, P. De Felice, L. Pierotti
MCNP Analytical Models of a Calibration Head Phantom for Bone-Seeker Nuclide "in vivo" Measurements
(amc091)

EG-P21
C. Oliveira, J. Salgado
Monte Carlo studies of the irradiator geometry of the Portuguese Gamma Irradiation Facility
&
C. Oliveira, L. Ferreira, J. Salgado
Process parameter determinations of the Portuguese Gamma Irradiation Facility: Monte Carlo simulation and measurements
(amc099+amc100)

EG-P22
A. Ulanovsky
Monte Carlo simulation of the in-vivo radiation measurements
(amc102)

EG-P23
J. O'Malley, S.J. Quillin, I.Crotch
Small angle Compton scattering experiments to investigate the use of MCNP4B in background characterisation for ash radiographic applications
(amc107)

EG-P24
J. O'Malley, S.J. Quillin, I.Crotch
Large angle Compton scattering experiments to investigate the use of MCNP4B in background characterisation for ash radiographic applications
(amc108)

EG-P25
H. Tsige-Tamirat
On the Use of CAD Geometry for Monte Carlo Particle Transport
(amc111)

EG-P26
J. Ródenas, J. Ortiz, L. Ballesteros, V. Serradell
Analysis of the Simulation of Ge-Detector Calibration Code for Environmental Radioactive Samples in a Marinelli Beaker Source Using the Monte Carlo Method
(amc115)

EG-P27
J. Peter, R.J. Jaszczak
Distributed Monte Carlo Simulation and Reconstruction for SPECT and PET Imaging Systems
(amc124)

EG-P28
M. Todorovic, F. Cremers, D. Albers, R. Schmidt
Simulation of a ^{32}P - sourcewire using MCNP4b and EGS4
(amc126)

EG-P29
A. Kling, J.G. Marques, A.J.G. Ramalho
Monte Carlo Simulations for the Estimation of Dose Rates During Handling of Spent Fuel at the Portuguese Research Reactor
(amc154)

EG-P30
P.J.B.M. Rachinhas, J.A.M. Lopes, T.H.V.T. Dias, F.P. Santos, C.A.N. Conde, A.D. Stauffer
Photoelectron Collection Efficiency in Rare Gases: A Monte Carlo Study
(amc157)

EG-P31
F.P. Santos, T.H.V.T. Dias, P.J.B.M. Rachinhas, L.M.N. Távora, C.A.N. Conde, A.D. Stauffer
Quenching of the Scintillation of Xe-Ne Mixtures: A Monte Carlo Study
(amc158)

EG-P32
C. Oliveira, T.A. Girard, V. Jeudy, J.I. Collar, D. Limagne, G. Waysand
A Monte Carlo Study of the Electron Response of a Metastable Superconducting Detector
(amc160)

EG-P33
M. M. D. Ramos, A.M. Stoneham
Monte Carlo Simulations of Bipolar Charge Transport in Polydiacetylene
(amc172)

EG-P34
S. Agostinelli, S. Chauvie, F. Foppiano, S. Garelli, F. Marchetto, P. Nieminen, M.G. Pia, V. Rolando
Medical applications of the Geant4 Toolkit
(amc185)

EG-P35
G.Mora, T.Pawlicki, A. Maio, C-M.Ma
Effect of voxel size on Monte Carlo dose calculations for radiotherapy treatment planning
(amc192)

EG-P36
I.I. Degtyarev, O.A. Liashenko, E.A. Merker, I.A. Yazynin
Electromagnetic Part of the RTS&T-2000 Code System: physics models and application to high-intensity beam collimator design
(amc200)

EG-P37
V. Taranenko, R. Meckbach, M. Degteva
Retrospective Modeling of the Gamma-Ray Transport for the Techa Riverside
(amc201)

EG-P38
María Perucha, Francisco Sáanchez-Doblado, Magnolia Rincón, Antonio Leal, Luis Núnez, Rafael Arráns, Ester Carrasco, Jose Antonio Sánchez-Calzado 2 , Luis Errazquin
Monte Carlo physical dosimetry for small photon beams
(amc214)

EG-P39
María Perucha, Francisco Sánchez-Doblado, Antonio Leal, Magnolia Rincón, Luis Núnez, Rafael Arráns, Ester Carrasco, Beatriz Sánchez-Nieto, Jose Antonio Sánchez-Calzado, Luis Errazquin
Monte Carlo dose distributions for Radiosurgery
(amc215)
EG-P40
Magnolia Rincón, Francisco Sánchez-Doblado, Antonio Leal, Maria Perucha, Rafael Arráns, Juan Carlos Medrano, Ester Carrasco, Jose Antonio Sánchez-Calzado, Luis Errazquin
Monte Carlo conformal treatment planning as an independent assessment
(amc216)

EG-P41
R. Fruhwirth, M. Regler
Modelling of Multiple Scattering Distributions by Mixture Models
(amc223)

EG-P42
E.J.N. Pereira, J.M.G. Martinho, M.N. Berberan-Santos
Radiative Transport in Multiple Scattering Media
(amc234)

EG-P43
R.P. Hugtenburg
Markov Chain Monte Carlo Methods in Radiotherapy Treatment Planning
(amc236)