

Pre-Congress Symposium 1 (Physics/Dosimetry)
Saturday, October 21, 09:00-12:00

Session Title
Monte Carlo Simulation / Image Reconstruction – Part I

Chairs

Dimitris Visvikis (Brest)

Michael Ljungberg (Lund)

Programme

09:00 – 09:30 Roel van Holen (Ghent): SPECT/(CT) Quantitative Reconstruction Techniques

09:30 – 10:00 Kris Thielemans (London): Motion Detection and Correction in PET/CT and PET/MRI

10:00 – 10:15 Discussion

10:15 - 10:45 Coffee Break

10:45 – 11:10 Andrew Reader (London): Basics and Principles of 4D PET Image Reconstruction

11:10 – 11:35 Joel Karp (Philadelphia): TOF Reconstruction Methods and Benefits for Clinical Imaging

11:35 – 12:00 Ronald Boellaard (Groningen): A Focus on MLAAPET Reconstruction

Educational Objectives

1. Learn about the basic methodology and principles of PET image reconstruction techniques
2. Gain insight in new developments and advancement of methods to improve quantitative results of hybrid PET and SPECT image reconstruction
3. Understand the methods of motion detection and correction in hybrid PET modalities including PET/MRI
4. Learn about advanced iterative reconstruction techniques using TOF-information and its application for reconstruction of activity and attenuation.

Summary

New and advanced methods for reconstruction of activity distribution and concentration in hybrid PET and SPECT modalities start to be routinely available. The application of these techniques to improve attenuation correction and –quantification is discussed. Moreover, the involvement of time dependence in image reconstruction and its application for motion detection and correction will be conveyed.

Key Words

Hybrid PET/MRI, PET/CT, SPECT/CT, attenuation correction, PET quantification, motion correction