

Evaluation of factors affecting quantitation with a 3-D rotating partial ring PET scanner

- - The effect of high count rates on cardiac perfusion quantification in a simultaneous PET

	Inven Siemens	Modul-IP Philips	ClearPET Raytest	Argus Cedecal	Conquest Sofe Unidimension	NovPET/CT Mediso	ALBIRA Bioset
Detector material	LSO	LSO	LYSO/HRP	LYSO/LSO	BGO	LYSO	LYSO monolithic
Crystal dimension (mm)	131 x 131 x 10	2 x 2 x 10	2 x 2 x 10	1.45 x 1.45 x 7.0 (LSO) 2 x 2 x 10	1.8 x 1.8 x 7	1.0 x 1.0 x 10	40 x 40 x 10
Ring diameter (mm)	181	181	125-225	118	200	181	111
axial FOV (mm)	127	118	110	48	94	94.8	40
Energy window (keV)	250-425	250-455	250-450	250-700	150-450	250-750	250-650
Peak detection efficiency (%)	8.72	2.85	3.05	4.32	14	77	2
Transaxial FWHM resolution at 5mm (mm)	1.54	2.34	2.02	1.86	1.4*	<1.0	1.59*
Reference	[12]	[23]	[14]	[25]	[19]	[13]	[18]

* Reported by permission of DMM from Guertgen et al. [23], Hermann et al. [19], Tables 2, 4 and 5.
* Corresponds to the spacing of the PET scanner and not the ring diameter, as the scanner is built up of two separate type detector heads.
* Spatial resolution measured in the center of FOV.

Description: -

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Tags: #Monte #Carlo #Simulations #in #Nuclear #Medicine #Imaging

Advanced radiation measurement techniques in diagnostic radiology and molecular imaging

The top bottom row of line profiles is tangentially radially drawn across the point source. Likewise, quantification of lesions in cases of spatial mismatch between PET and CT should not be performed.

Mosby's CT exam review Flashcards

PET images are interpreted on the basis of the presence, location, extent, and severity of myocardial perfusion and metabolic defects using a standard 17-segment model and visual scoring.

Advanced radiation measurement techniques in diagnostic radiology and molecular imaging

The number of subiterations was 24 for all reconstructions. The FDG lumped constant in the rat brain. Optimized dynamic framing for PET-based myocardial blood flow estimation.

ASNC imaging guidelines/SNMMI procedure standard for positron emission tomography (PET) nuclear cardiology procedures

CT-based attenuation correction typically adds less than 10 seconds to the cardiac scan time. The publication is designed to provide imaging guidelines for physicians and technologists who are qualified to practice nuclear cardiology.

3D TOF

Improvement of temporal resolution inherently decreases the count accuracy per time frame, since the approximate Poisson distribution of count statistics for prompt coincidences dictates a relative standard deviation dependent on the inverse square root of the observed counts. Uniformity measurement was performed on the uniform region. However, since PETbox has a dual-head geometry instead of a cylindrical geometry of typical full-ring small animal PET scanners, the NEMA NU 4-2008 standards are not always appropriate for the evaluation of such a system.

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