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同步辐射，自由电子激光，核技术应用等

An advanced fully 3D OSEM reconstruction for positron emission tomography

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摘要 A fully 3D OSEM reconstruction method for positron emission tomography (PET) based on symmetries and sparse matrix technique is described. Great savings in both storage space and computation time were achieved by exploiting the symmetries of scanner and sparseness of the system matrix. More reduction of storage requirement was obtained by introducing the approximation of system matrix. Iteration-filter was performed to restrict image noise in reconstruction. Performances of simulation data and phantom data got from Micro-PET (Type: Epuls-166) demonstrated that similar image quality was achieved using the approximation of the system matrix.

关键词 3D OSEM, PET, symmetries, sparse matrix
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