8th International Conference on Position Sensitive Detectors



Contribution ID: 72

Type: Poster

## Analysis of time resolution in a dual head LSO+PSPMT PET system using low pass filter interpoilation and DCFD techniques

Thursday 4 September 2008 15:10 (20 minutes)

A digital procedure is proposed in this work to improve time resolution in PET systems based in a low-pass filter interpolation plus a Digital Constant Fraction Discriminator (DCFD). It is analyzed the best way to implement this algorithm applied to our dual head PET system. Our detector uses two continuous LSO crystals each with a position sensitive PMT. Detector signals are adapted using a analog front-end to be processed in a digital acquisition board. A test bench has been developed to simulate the electronics and digital algorithms using Matlab. Results show that electronic noise and other undesired effects affect severally to the timing resolution. Interpolated DCFD has better results than not interpolated DCFD. For high errors, differences are reduced. An optimum DCFD delay selection also improves time resolution.

Author:Mr MONZO, Jose MPresenter:Mr MONZO, Jose MSession Classification:Poster Session 3 - Medical, PET and Biological

Track Classification: PET applications