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One of the problems in tomographic image reconstruction is the presence of noise on the projection data, due to low exposure time. This noise can be considered Poisson distributed and it is inversely proportional to the exposure time. In order to reduce the acquisition time, it is necessary to process the projections. The POCS approach (Projection onto Convex Sets) allows the use of a priori knowledge in the reconstruction process, improving the results. It is possible to obtain a further increase in performance, with a low cost-benefit criterion, by filtering the projections using estimation theoretic approaches, prior to reconstruction. In this work, we used the approaches of MAP (Maximum a Posteriori estimation), with different a priori densities and the Wiener Filter in different wavelet scales, preceded by the Anscombe Transformation. (Received February 15, 2008)