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Fuzzy Inference for Image Reconstruction from Projections In X-Ray Tomography

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Abstract : The ill posed problem of image reconstruction was resolved by the Bayesian inference frame work which gives sense to the information known about the inverse problem and aims at smoothing artefact in image. But this method result in a new problem which is the edge penalization. It's the reasons for what we opt to the fuzzy inference penalty function to preserve edge during the smoothing operation. The proposed algorithm FP-EM does not suffer from the same problem as that of MAP-EM algorithm, and it converges to a low noisy solution

Keywords : Analytic estimation, Bayesian inference and estimation, Fuzzy Inference., Computed tomography, Non destructive testing