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Genetic Approach for the Determination of Object Parameters from X Ray Projections

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Abstract: In this study, a new method is presented, based on genetic algorithms for determining object parameters such as radii and/or attenuation coefficients with some assumptions and estimating a cross-sectional image of an object from its projections obtained by X ray illumination. After it was tested for projections degraded by different random noise levels, it was observed that the genetic and fuzzy genetic algorithms improved the signal to noise ratio of the projections. The fuzzy genetic algorithm gave better results than the genetic algorithm.

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