

Discrete fan-shaped Radon transform for net-like structures' centerlines detection

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Abstract

The article discusses a modified Radon transform as applied to the problem of detecting the centerlines in images of net-like structures. The analytical expression of the classical Radon transform is reduced to a form suitable for the analysis of net-like structures, one of the main characteristics of such structures being the presence of branching points and intersections of branches. The paper analyzes the methods for the numerical computation of the derived transform for discrete data. It describes a method for identifying the centerlines of branches in images of net-like structures using the proposed transform.

Keywords: fan-shaped Radon transform, net-like structure, discrete data.

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