

Povzetek

Računalniška tomografija temelji na dejstvu, da je prepustnost rentgenskih žarkov skozi dani objekt odvisna od njegove zgradbe. V diplomskem delu bomo predstavili princip računalniške tomografije in metodo za rekonstrukcijo slikanega objekta na podlagi danih meritev, pri kateri imata ključno vlogo Radonova in Fourierjeva transformacija ter centralni izrek rezin, ki ju povezuje.

Math. Subj. Class. (2010): 42A38, 42B10, 42B35, 44A12, 65R10, 92C55.

KLJUČNE BESEDE: Računalniška tomografija, Radonova transformacija, centralni izrek rezin, inverz Radonove transformacije, Fourierjeva transformacija, n -dimenzionalna Fourierjeva transformacija, Diskretna Fourierjeva transformacija, hitra Fourierjeva transformacija.

KEY WORDS: Computed Tomography, Radon Transform, Central Slice Theorem, Inverse Radon Transform, Fourier Transform, n -dimensional Fourier Transform, Discrete Fourier Transform, Fast Fourier Transform.

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