

Type parameter estimation of 2D-GTD model based on ADMM approach

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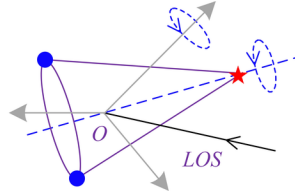
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Abstract

The type parameter helps in the scattering mechanism analysis and scattering center identification. However, current approximate solution methods based on spectral estimation are noise-sensitive and have poor accuracy. In this letter, a high-precision approach for the type parameter based on the alternating direction method of multipliers (ADMM) is proposed. We use logarithmic transformation to separate the type parameter and the amplitude from the coupling term, and initially obtain the closed-form solution of the type parameter. Then, the regularization term of l2-norm is used for denoising. Finally, a joint optimization model based on ADMM is constructed to effectively estimate the type parameter. Simulation results confirm the high accuracy of the proposed approach.

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- ★ $\alpha_i = 0$ Double curved surface, straight edge
- $\alpha_i = -0.5$ Curved-edge diffraction

