Implementation of fast kirchhoff transformation algorithm exemplified for bessel beams

S.A. Balalaev[1,2], S.N. Khonina[1,2]
[1]Image Processing Systems Institute of the RAS,
[2]Samara State Aerospace University (SSAU)

Abstract

The paper analyzes high-performance non-paraxial algorithms for computation of a complex field of a laser beam at various distances from the source. A comparative analysis of previously used and newly developed algorithms is provided. Despite the generality of application of the developed algorithms, their efficiency is achieved under certain conditions. The study provides the characteristics of accuracy and speed of the algorithms when applied to particular tasks.

Keywords: non-paraxial propagation, Kirchhoff transformation, fast calculation algorithms, Bessel beams.

Citation: Balalaev SA, Khonina SN. Implementation of Fast Kirchhoff Transformation Algorithm Exemplified for Bessel Beams. Computer Optics 2006; 30: 69-73.

Acknowledgements: This work was supported by the Russian-American program “Basic Research and Higher Education” (CRDF Project SA-014-02), a grant from the КАИК 05-01-96505, and also a grant from INTAS 04-77-7198.

Access full text (in Russian)

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