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ANALYSIS OF ELECTROMAGNETIC SCATTERING BY A NEARLY TOUCHING PAIR OF CYLINDERS WITH THE USE OF A MULTIFILAMENT SOURCE MODEL

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KEY TERMS

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ABSTRACT

Proposed in this article is the use of a model comprising filamentary sources that are located, whenever applicable, according to guidelines based on image theory. The idea is applied to the analysis of two-dimensional scattering by a perfectly conducting nearly touching pair of circular cylinders excited by a TE-polarized plane wave. An effective analysis of this scattering problem is facilitated, as the trial-and-error stage, often required for selecting appropriate source locations, is significantly reduced. The numerical results are verified by internal checks, as well as by comparison against the results of a reference solution.