

Methods for solving a singular integral equation with Cauchy kernel on the real line

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Abstract

We study exact and approximate methods for solving a singular integral equation with Cauchy kernel on the real line. On the basis of the theory of positive operators, we prove an existence and uniqueness theorem for this equation in the space of Lebesgue square integrable functions. This theorem is then used to give a theoretical justification of general projection and projection-iteration methods as well as an iteration method for solving this equation. © 2008 MAIK Nauka.

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