

The method of mechanical quadratures for integral equations with fixed singularity

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Abstract

© 2016, Allerton Press, Inc. We investigate the method of mechanical quadratures for integral equations with fixed singularity. We establish estimates of the error of this method based on a quadrature process, which is the best in the class of differentiable functions. We prove the convergence of the method in finite-dimensional and uniform metrics. We find that the investigated quadrature method is optimal by order on the Hölder class of functions.

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Keywords

accuracy, convergence, integral equation, optimality, quadrature process, solution