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## Numerical Solution of Fredholm Integral Equation of the Second Kind by Using Finite Element Method

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In this paper we consider an adaptive finite element method for a Fredholm integral equation of the second kind. The algorithm produces a sequence of successively refined meshes with a final mesh on which a given error tolerance is satisfied. A reliable and efficient adaptive algorithm based on finite element method is then designed for a specific computational goal with applications to potential problems.

**Keywords:** Fredholms integral equation. Potential problems, Adaptive finite element method