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Superconvergence of the Iterated Discrete Legendre Galerkin Method for Fredholm-Hammerstein Equations

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Abstract : In this paper we analyse the iterated discrete Legendre Galerkin method for Fredholm-Hammerstein integral equations with smooth kernel. Using sufficiently accurate numerical quadrature rule, we obtain superconvergence rates for the iterated discrete Legendre Galerkin solutions in both infinity and L^2-norm. Numerical examples are given to illustrate the theoretical results.

Keywords : hammerstein integral equations, spectral method, discrete galerkin, numerical quadrature, superconvergence
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