

Numerical methods for nonlinear singular Volterra integral equations

Teresa Diogo⁽¹⁾ and Magda Rebelo⁽²⁾

(1) CEMAT-Departamento de Matemática, Instituto Superior Técnico, UTL, Av. Rovisco Pais, 1049-001 Lisboa, Portugal

(2) CEMAT and Departamento de Matemática, Faculdade de Ciências e Tecnologia, Monte da Caparica, 2829-516 Caparica, Portugal

Abstract.

This work is concerned with the numerical solution of two related nonlinear singular Volterra integral equations which arise in connection with a heat transfer problem. We consider product integration and collocation methods for both equations and several numerical results are presented illustrating the performance of these methods.