AN EXTRAPOLATION METHOD FOR A VOLTERRA INTEGRAL EQUATION WITH WEAKLY SINGULAR KERNEL

Pedro Lima and Teresa Diogo
Departamento de Matemática
Instituto Superior Técnico
Av. Rovisco Pais
1096 Lisboa Codex
PORTUGAL

ABSTRACT

In this work we consider second kind Volterra integral equations with weakly singular kernels. By introducing some appropriate function spaces we prove the existence of an asymptotic error expansion for Euler's method. This result allows the use of certain extrapolation procedures which is illustrated by means of some numerical examples.