

**SECOND ORDER VOLTERRA
INTEGRO-DIFFERENTIAL EQUATIONS ARISING IN
ULTIMATE RUIN THEORY: AN OVERVIEW
COMBINED WITH NUMERICAL TREATMENT**

ATHENA MAKROGLOU,
DEPARTMENT OF MATHEMATICS, UNIVERSITY OF PORTSMOUTH,
1ST FLOOR LION GATE BLDG, PORTSMOUTH, PO1 3HF, UK.
ATHENA.MAKROGLOU@PORT.AC.UK

DIMITRIOS G. KONSTANTINIDES,
DEPARTMENT OF STATISTICS AND ACTUARIAL-FINANCIAL
MATHEMATICS,
UNIVERSITY OF THE AEGEAN, KARLOVASSI, 83200 SAMOS, GREECE
KONSTANT@AEGEAN.GR

ABSTRACT. Models of ultimate ruin theory in the form of second order Volterra integro-differential equations are reviewed. Numerical results are also given which were obtained by polynomial collocation methods.