1. Record Nr. UNINA9910822514403321

Autore	Corduneanu C.
Titolo	Functional differential equations : advances and applications / / Constantin Corduneanu, Yizeng Li, Mehran Mahdavi
Pubbl/distr/stampa	Hoboken, New Jersey : , : John Wiley & Sons, Incorporated, , [2016] ©2016
ISBN	1-119-18949-7 1-119-18948-9
Descrizione fisica	1 online resource (395 p.)
Collana	Pure and applied mathematics
Disciplina	515/.35
Soggetti	Functional differential equations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	TITLE PAGE; TABLE OF CONTENTS; PREFACE; ACKNOWLEDGMENTS; 1 INTRODUCTION, CLASSIFICATION, SHORT HISTORY, AUXILIARY RESULTS, AND METHODS; 1.1 CLASSICAL AND NEW TYPES OF FEs; 1.2 MAIN DIRECTIONS IN THE STUDY OF FDE; 1.3 METRIC SPACES AND RELATED CONCEPTS; 1.4 FUNCTIONS SPACES; 1.5 SOME NONLINEAR AUXILIARY TOOLS; 1.6 FURTHER TYPES OF FES; 2 EXISTENCE THEORY FOR FUNCTIONAL EQUATIONS; 2.1 LOCAL EXISTENCE FOR CONTINUOUS OR MEASURABLE SOLUTIONS; 2.2 GLOBAL EXISTENCE FOR SOME CLASSES OF FUNCTIONAL DIFFERENTIAL EQUATIONS; 2.3 EXISTENCE FOR A SECOND-ORDER FUNCTIONAL DIFFERENTIAL EQUATION 2.4 THE COMPARISON METHOD IN OBTAINING GLOBAL EXISTENCE RESULTS2.5 A FUNCTIONAL DIFFERENTIAL EQUATION WITH BOUNDED SOLUTIONS ON THE POSITIVE SEMIAXIS; 2.6 AN EXISTENCE RESULT FOR FUNCTIONAL DIFFERENTIAL EQUATIONS WITH RETARDED ARGUMENT; 2.7 A SECOND-ORDER FUNCTIONAL DIFFERENTIAL EQUATION WITH BOUNDED SOLUTIONS ON THE POSITIVE SEMIAXIS; 2.8 A GLOBAL EXISTENCE RESULT FOR A CLASS OF FIRST-ORDER FUNCTIONAL DIFFERENTIAL EQUATIONS; 2.9 A GLOBAL EXISTENCE RESULT IN A SPECIAL FUNCTION SPACE AND A POSITIVITY RESULT; 2.10 SOLUTION SETS FOR CAUSAL FUNCTIONAL DIFFERENTIAL EQUATIONS 2.11 AN APPLICATION TO OPTIMAL CONTROL THEORY2.12 FLOW INVARIANCE; 2.13 FURTHER EXAMPLES/APPLICATIONS/COMMENTS;

2.14 BIBLIOGRAPHICAL NOTES; 3 STABILITY THEORY OF FUNCTIONAL DIFFERENTIAL EQUATIONS; 3.1 SOME PRELIMINARY CONSIDERATIONS AND DEFINITIONS; 3.2 COMPARISON METHOD IN STABILITY THEORY OF ORDINARY DIFFERENTIAL EQUATIONS; 3.3 STABILITY UNDER PERMANENT PERTURBATIONS; 3.4 STABILITY FOR SOME FUNCTIONAL DIFFERENTIAL EQUATIONS; 3.5 PARTIAL STABILITY; 3.6 STABILITY AND PARTIAL STABILITY OF FINITE DELAY SYSTEMS; 3.7 STABILITY OF INVARIANT SETS; 3.8 ANOTHER TYPE OF STABILITY
3.9 VECTOR AND MATRIX LIAPUNOV FUNCTIONS3.10 A FUNCTIONAL DIFFERENTIAL EQUATION; 3.11 BRIEF COMMENTS ON THE START AND EVOLUTION OF THE COMPARISON METHOD IN STABILITY; 3.12 BIBLIOGRAPHICAL NOTES; 4 OSCILLATORY MOTION, WITH SPECIAL REGARD TO THE ALMOST PERIODIC CASE; 4.1 TRIGONOMETRIC POLYNOMIALS AND APr-SPACES; 4.2 SOME PROPERTIES OF THE SPACES; 4.3 APr-SOLUTIONS TO ORDINARY DIFFERENTIAL EQUATIONS; 4.4 APr-SOLUTIONS TO CONVOLUTION EQUATIONS; 4.5 OSCILLATORY SOLUTIONS INVOLVING THE SPACE B; 4.6 OSCILLATORY MOTIONS DESCRIBED BY CLASSICAL ALMOST PERIODIC FUNCTIONS
4.7 DYNAMICAL SYSTEMS AND ALMOST PERIODICITY4.8 BRIEF COMMENTS ON THE DEFINITION OF SPACES AND RELATED TOPICS; 4.9 BIBLIOGRAPHICAL NOTES; 5 NEUTRAL FUNCTIONAL DIFFERENTIAL EQUATIONS; 5.1 SOME GENERALITIES AND EXAMPLES RELATED TO NEUTRAL FUNCTIONAL EQUATIONS; 5.2 FURTHER EXISTENCE RESULTS CONCERNING NEUTRAL FIRST-ORDER EQUATIONS; 5.3 SOME AUXILIARY RESULTS; 5.4 A CASE STUDY, I; 5.5 ANOTHER CASE STUDY, II; 5.6 SECOND-ORDER CAUSAL NEUTRAL FUNCTIONAL DIFFERENTIAL EQUATIONS, I; 5.7 SECOND-ORDER CAUSAL NEUTRAL FUNCTIONAL DIFFERENTIAL EQUATIONS, II; 5.8 A NEUTRAL FUNCTIONAL EQUATION WITH CONVOLUTION
5.9 BIBLIOGRAPHICAL NOTES