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14.2 Caratheodory solutions; 14.3 The step method for systems with discrete delays; 15 Smoothness of solutions and expansion into the Taylor series; 15.1 Density of special initial functions; 15.2 Expansion of FDE solutions into Taylor series; 16 The sewing procedure; 16.1 General case; 16.2 Sewing (modification) by polynomials; 16.3 The sewing procedure of the second order
16.4 Sewing procedure of the second order for linear delay differential equation

Sommario/riassunto

The edition introduces a new class of invariant derivatives and shows their relationships with other derivatives, such as the Sobolev generalized derivative and the generalized derivative of the distribution theory. This is a new direction in mathematics. i-Smooth analysis is the branch of functional analysis that considers the theory and applications of the invariant derivatives of functions and functionals. The important direction of i-smooth analysis is the investigation of the relation of invariant derivatives with the Sobolev generalized derivative and the generalized derivative of distribution theory. Until now, i-smooth analysis has been developed mainly to apply to the theory of functional differential equations, and the goal of this book is to present i-smooth analysis as a branch of functional analysis. The notion of the invariant derivative (i-derivative) of nonlinear functionals has been introduced in mathematics, and this in turn developed the corresponding i-smooth calculus of functionals and showed that for linear continuous functionals the invariant derivative coincides with the generalized derivative of the distribution theory. This book intends to introduce this theory to the general mathematics, engineering, and physicist communities..
