Applicazioni Del Calcolo Differenziale Teoria Esercizi E Consigli

This is an entirely new book. The first edition appeared in 1923 and at that time it was up to date. But in 193 5 and 1938 the author and Prof. D. J. STRUIK published a new book, their Einführung I and li, and this book not only gave the first systematic introduction to the kernel index method but also contained many notions that had come into prominence since 1923. For instance densities, quantities of the second kind, pseudo-quantities, normal Coordinates, the symbolism of exterior forms, the LIE derivative, the theory of variation and deformation and the theory of subprojective connexions were included. Now since 1938 there have been many new developments and so a book on RICCI cal culus and its applications has to cover quite different ground from the book of 1923. Though the purpose remains to make the reader acquainted with RICCI's famous instrument in its modern form, the book must have quite a different methodical structure and quite different applica tions have to be chosen. The first chapter contains algebraical preliminaries but the whole text is modernized and there is a section on hybrid quantities (quantities with indices of the first and of the second kind) and one on the many abridged notations that have been developed by several authors. In the second chapter the most important analytical notions that come before the introduction of a connexion aredealt with in full.

Questo volume è interamente dedicato alle applicazioni delle derivate, partendo dai problemi relativi al suo significato geometrico a quelli del Teorema di Rolle, di Lagrange, di Cauchy e di De L'Hopital; dopo aver trattato le derivate di ordine superiore e il Teorema di Fermat si passa ai problemi di Massimo e di Minimo sia in Geometria Piana, che Solida, che Analitica. Non manca lo studio della Concavità e dei Punti di Flesso, nonché una guida per i problemi con funzioni parametriche. Infine vengono trattate le Serie di Taylor e di Maclaurin utili per numerose applicazioni come per il calcolo dei limiti.Ogni argomento è spiegato gradualmente con numerosi esempi ed esercizi svolti e i teorema dimostrati sono arricchiti di grafici che offrono anche un approccio visivo alla trattazione.

This book is addressed to mathematics and physics students who want to develop an interdisciplinary view of mathematics, from the age of Riemann, Poincaré and Darboux to basic tools of modern mathematics. It enables them to acquire the sensibility necessary for the formulation and solution of difficult problems, with an emphasis on concepts, rigour and creativity. It consists of eight self-contained parts: ordinary differential equations; linear elliptic equations; calculus of variations; linear and non-linear hyperbolic equations; parabolic equations; Fuchsian functions and non-linear equations; the functional equations of number theory; pseudo-differential operators and pseudo-differential equations. The author leads readers through the original papers and introduces new concepts, with a selection of topics and examples that are of high pedagogical value.

The scientific personalities of Luigi Cremona, Eugenio Beltrami, Salvatore Pincherle, Federigo Enriques, Beppo Levi, Giuseppe Vitali, Beniamino Segre and of several other mathematicians who worked in Bologna in the century 1861–1960 are examined by different authors, in some cases providing different view points. Most contributions in the volume are historical; they are reproductions of original documents or studies on an original work and its impact on later research. The achievements of other mathematicians are investigated for their present-day importance.

H. Busemann: The synthetic approach to Finsler spaces in the large.- E.T. Davies: Vedute generali sugli spazi variazionali.- D. Laugwitz: Geometrical methods in the

differential geometry of Finsler spaces.- V.V. Wagner: Geometria del calcolo delle variazioni.

The Symbolic Universe considers the ways in which many leading mathematicians between 1890 and 1930 attempted to apply geometry to physics. It concentrates on responses to Einstein's theories of special and general relativity, but also considers the philosophical implications of these ideas.

In the first decade of the twentieth century as Albert Einstein began formulating a revolutionary theory of gravity, the Italian mathematician Gregorio Ricci was entering the later stages of what appeared to be a productive if not particularly memorable career, devoted largely to what his colleagues regarded as the dogged development of a mathematical language he called the absolute differential calculus. In 1912, the work of these two dedicated scientists would intersect—and physics and mathematics would never be the same. Einstein's Italian Mathematicians chronicles the lives and intellectual contributions of Ricci and his brilliant student Tullio Levi-Civita, including letters, interviews, memoranda, and other personal and professional papers, to tell the remarkable, little-known story of how two Italian academicians, of widely divergent backgrounds and temperaments, came to provide the indispensable mathematical foundation—today known as the tensor calculus—for general relativity.