Record Nr. UNINA9910780880103321 Autore Ng Siu-Ah **Titolo** Nonstandard methods in functional analysis [[electronic resource]]: lectures and notes / / Siu-Ah Ng Singapore; ; Hackensack, NJ, : World Scientific, c2010 Pubbl/distr/stampa **ISBN** 1-282-76154-4 9786612761546 981-4287-55-5 Descrizione fisica 1 online resource (340 p.) Disciplina 515/.7 Soggetti Functional analysis Nonstandard mathematical analysis 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 Preface; Convention and Symbols; List of Theorems; Contents; 1. Nonstandard Analysis; 2. Banach Spaces; 3. Banach Algebras; 4. Selected Research Topics; Suggestions for Further Reading; Bibliography; Index Sommario/riassunto In the early 1960's, by using techniques from the model theory of firstorder logic, Robinson gave a rigorous formulation and extension of Leibniz' infinitesimal calculus. Since then, the methodology has found applications in a wide spectrum of areas in mathematics, with particular success in the probability theory and functional analysis. In the latter, fruitful results were produced with Luxemburg's invention of the nonstandard hull construction. However, there is still no publication of a coherent and self-contained treatment of functional analysis using

methods from nonstandard analysis.