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N’Guérékata, Gaston Mandata (1-MRGS-CMN; Baltimore, MD)
★Spectral theory for bounded functions and applications to evolution equations.
Mathematics Research Developments Series.

This monograph is devoted to the theory of spectra of bounded functions in abstract spaces. Spectral theory is very important as it gives important qualitative properties of solutions to evolution equations. It is particularly useful in the study of the asymptotic behavior of mild solutions of evolution equations. The monograph is divided into five chapters. Chapter 1 is about some basic definitions and notations. Chapter 2 is devoted to the theory of almost periodic functions. These functions have important applications in celestial mechanics, control theory and other fields. In chapter 3, the author discusses the concepts of almost automorphic functions and sequences, which are generalizations of almost periodic functions and sequences. After these chapters, the author moves on to defining the spectrum of bounded functions, in chapter 4. The concepts of Carleman, Beurling, uniform and circular spectra are defined. The last chapter is devoted to the study of difference and first- and second-order differential equations.

Overall, this monograph is useful for researchers working in the field of spectral theory of bounded functions and the qualitative theory of differential equations in abstract spaces. The monograph is written for graduate students, and to read it one needs to first go through the basics of abstract spaces and functional analysis.

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