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Sommario/riassunto	The tracking/rejection of periodic signals constitutes a wide field of research in the control theory and applications area. Repetitive Control has proven to be an efficient way to face this topic. However, in some applications the frequency of the reference/disturbance signal is time-varying or uncertain. This causes an important performance degradation in the standard Repetitive Control scheme. This book presents some solutions to apply Repetitive Control in varying frequency conditions without loosing steady-state performance. It also includes a complete theoretical development and experimental results in two representative systems. The presented solutions are organized in two complementary branches: varying sampling period Repetitive Control and High Order Repetitive Control. The first approach allows dealing with large range frequency variations while the second allows dealing with small range frequency variations. The book also presents applications of the described techniques to a Roto-magnet plant and to a power active filter device.