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Titolo	Analysis and Suppression of Low-Frequency Oscillation Between EMUs and Traction Networks in High-speed Railways / / by Zhigang Liu, Siqi Wu, Xiangyu Meng
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Nota di contenuto	Overview of Low-Frequency Oscillation in Railways Vehicle-Grid Systems -- Vehicle-Grid System Model in Time Domain and Oscillation Mechanism Analysis -- Vehicle-grid System Model in Frequency Domain and Oscillation Mechanism Analysis -- Impedance Model Under Unified Framework and Their Relations -- Suppression of Low-frequency Oscillation Based on Model Predictive Control -- Suppression of Low-frequency Oscillation Based on Passivity-based Control -- Suppression of Low-frequency Oscillation Based on Fuzzy Control -- Comparative Analysis for the Traction Converters in Vehicle-Grid System of High-speed Railway -- Dynamic Power Compensation and its Suppression Mechanism.
Sommario/riassunto	This book focuses on the low-frequency oscillation between EMUs and traction networks in high-speed Railways. As the power source of high-speed trains, the traction network's power performance directly affects the safe and stable operation of the train. However, the low-frequency oscillation between EMUs and traction networks will fluctuate voltage or

current, resulting in poor power quality, electrical device failure, and even interruption of traction power. Therefore, it is important to reveal the mechanism of low-frequency oscillation and propose suppression strategies. This book systematically shows the newest research results of analysis and suppression of low-frequency oscillation between EMUs and traction networks in high-speed railways, especially in the modeling methods of vehicle-grid systems and suppression strategies for low-frequency oscillation. These methods or strategies can provide important references and help for researchers, scholars, and engineers on traction power technology in high-speed railways. The main contents include the overview of low-frequency oscillation between EMUs and traction networks, the introduction of main modeling methods for vehicle-grid systems, especially single-phase rectifiers, the line-side converter control algorithms in vehicles for the suppression of low-frequency oscillation, the traction substation power compensation strategies for the suppression of low-frequency oscillation, etc.

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