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Autore	Chen Jingbiao
Titolo	Faraday Laser : A Frequency-Stabilized Diode Laser Based on Faraday Atomic Optical Filters / / by Jingbiao Chen, Tiantian Shi, Duo Pan, Zheyi Ge, Jia Zhang, Zijie Liu, Xiaomin Qin, Yaqi Wang
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Nota di contenuto	1 Introduction -- 2 Overview of Faraday Lasers -- 3 Laser Diodes for Faraday Lasers -- 4 Faraday Atomic Filter -- 5 Faraday Laser Scheme and Technology -- 6 Frequency Stabilization Techniques for Faraday Lasers -- 7 Applications of Faraday Lasers -- 8 Future Trends.
Sommario/riassunto	This book systematically introduces the basic principles and technologies of Faraday lasers, starting from the development history and trends of diode lasers. High-precision frequency-stabilized diode lasers are essential instruments for frontier scientific research. They are the core components in the booming fields of quantum precision measurement, time-frequency communication, and atomic physics, and are of great significance to economic development and security construction. It elaborates on the significant advantages of Faraday lasers, based on the Faraday atomic optical filter, including their ability to automatically align with atomic transition lines during startup and their resistance to temperature and current disturbances. Additionally, the book covers the practical applications and significant value of Faraday lasers in devices such as cesium atomic clocks, atomic gravimeters, and underwater optical communication systems. It also explores the future development trends of Faraday lasers. This book is suitable for researchers and engineers in the field of frequency-stabilized diode lasers, and can also be used as a textbook for advanced undergraduate and graduate courses in quantum precision measurement, precision spectroscopy, and related fields. The basis of English translation of this book, originally in Chinese, was facilitated by artificial intelligence. The content was later revised by the authors for accuracy.