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Autore	Wilson, Angus <1913-1991>
Titolo	The Collected stories / of Angus Wilson
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Autore	Ohtsubo J (Junji)
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with Optical Injection -- Dynamics with Optoelectronic Feedback and Modulation -- Instability and Chaos in Various Laser Structures -- Chaos Control and Applications -- Stabilization -- Stability and Bistability in Feedback Interferometer and Their Applications -- Chaos Synchronization in Semiconductor Lasers -- Chaotic Communications -- Physical Random Number Generations and Chaos Chips.

Sommario/riassunto

This third edition of “Semiconductor Lasers, Stability, Instability and Chaos” was significantly extended. In the previous edition, the dynamics and characteristics of chaos in semiconductor lasers after the introduction of the fundamental theory of laser chaos and chaotic dynamics induced by self-optical feedback and optical injection was discussed. Semiconductor lasers with new device structures, such as vertical-cavity surface-emitting lasers and broad-area semiconductor lasers, are interesting devices from the viewpoint of chaotic dynamics since they essentially involve chaotic dynamics even in their free-running oscillations. These topics are also treated with respect to the new developments in the current edition. Also the control of such instabilities and chaos control are critical issues for applications. Another interesting and important issue of semiconductor laser chaos in this third edition is chaos synchronization between two lasers and the application to optical secure communication. One of the new topics in this edition is fast physical number generation using chaotic semiconductor lasers for secure communication and development of chaos chips and their application. As other new important topics, the recent advance of new semiconductor laser structures is presented, such as quantum-dot semiconductor lasers, quantum-cascade semiconductor lasers, vertical-cavity surface-emitting lasers and physical random number generation with application to quantum key distribution. Stabilities, instabilities, and control of quantum-dot semiconductor lasers and quantum-cascade lasers are important topics in this field.