1. Record Nr. UNINA9910300431003321

Autore	Rosin David P
Titolo	Dynamics of Complex Autonomous Boolean Networks / / by David P. Rosin
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-13578-3
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (208 p.)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	511.3
Soggetti	Physics Dynamics Ergodic theory Electronic circuits Computational complexity System theory Applications of Graph Theory and Complex Networks Dynamical Systems and Ergodic Theory Electronic Circuits and Devices Complexity Complex Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Previous Work on Boolean Networks -- Autonomous Boolean Networks on Electronic Chips -- Chaotic Dynamics of Autonomous Boolean Networks -- Ultra-Fast Physical Generation of Random Numbers Using Hybrid Boolean Networks -- Periodic Dynamics in Autonomous Boolean Networks -- Chimera Dynamics in Networks of Boolean Phase Oscillators -- Excitable Dynamics in Autonomous Boolean Networks -- Cluster Synchronization in Boolean Neural Networks -- Summary and Outlook.
Sommario/riassunto	This thesis focuses on the dynamics of autonomous Boolean networks, on the basis of Boolean logic functions in continuous time without external clocking. These networks are realized with integrated circuits

	on an electronic chip as a field programmable gate array (FPGA) with roughly 100,000 logic gates, offering an extremely flexible model system. It allows fast and cheap design cycles and large networks with arbitrary topologies and coupling delays. The author presents pioneering results on theoretical modeling, experimental realization, and selected applications. In this regard, three classes of novel dynamic behavior are investigated: (i) Chaotic Boolean networks are proposed as high-speed physical random number generators with high bit rates. (ii) Networks of periodic Boolean oscillators are home to long-living transient chimera states, i.e., novel patterns of coexisting domains of spatially coherent (synchronized) and incoherent (desynchronized) dynamics. (iii) Excitable networks exhibit cluster synchronization and can be used as fast artificial Boolean neurons whose spiking patterns can be controlled. This work presents the first experimental platform for large complex networks, which will facilitate exciting future developments.

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Record Nr.	UNINA9910701384403321
Titolo	Gulf of Mexico OCS oil and gas lease sale, 2011 [[electronic resource]] : Western Planning Area lease sale 218 : final supplemental environmental impact statement / / Bureau of Ocean Energy Management, Regulation and Enforcement, Gulf of Mexico OCS Region
Pubbl/distr/stampa	New Orleans : , : U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Regulation and Enforcement, Gulf of Mexico OCS Region, , [2011]
Descrizione fisica	1 online resource (996 unnumbered pages) : illustrations, maps
Soggetti	Oil and gas leases - Environmental aspects - Mexico, Gulf of Offshore oil industry - Environmental aspects - America, Gulf of Offshore gas industry - Environmental aspects - Mexico, Gulf of
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from title screen (viewed on Jan. 6, 2012). "OCS EIS/EA."

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