

1. Record Nr.	UNINA9910139248903321
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Titolo	The Wigner Monte-Carlo method for nanoelectronic devices : a particle description of quantum transport and decoherence // Damien Querlioz, Philippe Dollfus
Pubbl/distr/stampa	London, : ISTE Hoboken, N.J., : Wiley, 2010
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Edizione	[1st ed.]
Descrizione fisica	1 online resource (268 p.)
Collana	ISTE
Altri autori (Persone)	DollfusPhilippe
Disciplina	530.4/10151
Soggetti	Solid state physics - Mathematics Semiconductors Transport theory Coherent states Quantum statistics Particles (Nuclear physics) Nanoelectronics Wigner distribution Monte Carlo method
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 and index.
Nota di contenuto	Theoretical framework of quantum transport in semiconductors and devices -- Particle-based Wigner Monte Carlo approach to device simulation -- Application of the Wigner Monte Carlo technique to RTD, MOSFET, and CNTFET -- Transition from quantum to semi-classical

transport through decoherence theory.

Sommario/riassunto

This book gives an overview of the quantum transport approaches for nanodevices and focuses on the Wigner formalism. It details the implementation of a particle-based Monte Carlo solution of the Wigner transport equation and how the technique is applied to typical devices exhibiting quantum phenomena, such as the resonant tunnelling diode, the ultra-short silicon MOSFET and the carbon nanotube transistor. In the final part, decoherence theory is used to explain the emergence of the semi-classical transport in nanodevices.

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Titolo

Rainfed agriculture : unlocking the potential // edited by Suhas P. Wani, Johan Rockstrom, and Theib Oweis

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Wallingford, Oxfordshire, UK ; ; Cambridge, MA, : CABI, c2009

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Comprehensive assessment of water management in agriculture series ;
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Altri autori (Persone)

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RockstromJohan
OweisTheib Yousef

Disciplina

631.5/86

Soggetti

Dry farming - Asia
Dry farming - Africa
Water in agriculture - Asia
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Nota di contenuto

Contents; Contributors; Series Foreword; Foreword; Preface;

Acknowledgements; 1 Rainfed Agriculture - Past Trends and Future Prospects; 2 Zooming in on the Global Hotspots of Rainfed Agriculture in Water-constrained Environments; 3 Water Resource Implications of Upgrading Rainfed Agriculture - Focus on Green and Blue Water Trade-offs; 4 Tectonics-Climate-linked Natural Soil Degradation and its Impact in Rainfed Agriculture: Indian Experience; 5 Determinants of Crop Growth and Yield in a Changing Climate; 6 Yield Gap Analysis: Modelling of Achievable Yields at Farm Level
7 Can Rainfed Agriculture Feed the World? An Assessment of Potentials and Risk
8 Opportunities for Improving Crop Water Productivity through Genetic Enhancement of Dryland Crops; 9 Water Harvesting for Improved Rainfed Agriculture in the Dry Environments; 10 Supplemental Irrigation for Improved Rainfed Agriculture in WANA Region; 11 Opportunities for Water Harvesting and Supplemental Irrigation for Improving Rainfed Agriculture in Semi-arid Areas; 12 Integrated Farm Management Practices and Upscaling the Impact for Increased Productivity of Rainfed Systems
13 Challenges of Adoption and Adaptation of Land and Water Management Options in Smallholder Agriculture: Synthesis of Lessons and Experiences
14 Scaling-out Community Watershed Management for Multiple Benefits in Rainfed Areas; Index

Sommario/riassunto

Based on the case studies from varied agricultural and ecological regions in Asia and Africa, this book discusses the need for adopting new paradigms between rainfed and irrigated agriculture, catchment/micro-watershed management approaches, upgrades in science-based development and more investments in rainfed areas.
