

PHYSICAL SCIENCES

ZEITSCHRIFT FÜR NATURFORSCHUNG A

EDITOR-IN-CHIEF

Martin Holthaus, Oldenburg

EDITORS

Corina Fetecau, Iasi

Claus Kiefer, Köln

Gerd Roepke, Rostock

Willi-Hans Steeb, Auckland Park

HONORARY EDITOR

Siegfried Großmann, Marburg

ADVISORY BOARD

Ulrich Eckern, Augsburg

Thomas Elze, Pisa

Jan Honolka, Prag

Albrecht Klemm, Bonn

Thorsten Klüner, Oldenburg

Shijun Liao, Shanghai

Stefan Lochbrunner, Rostock

Detlef Lohse, Twente

Aneta Stefanovska, Lancaster

Martin Zirnbauer, Köln

DE GRUYTER

ABSTRACTED/INDEXED IN Chemical Abstracts Service (CAS) – SciFinder; Elsevier SCOPUS; JournalTOCs; SCImago (SJR); Thomson Reuters: Current Contents/Physical, Chemical and Earth Sciences, Journal Citation Reports/Science Edition, Science Citation Index, Science Citation Index Expanded.

The publisher, together with the authors and editors, has taken great pains to ensure that all information presented in this work (programs, applications, amounts, dosages, etc.) reflects the standard of knowledge at the time of publication. Despite careful manuscript preparation and proof correction, errors can nevertheless occur. Authors, editors and publisher disclaim all responsibility for any errors or omissions of liability for the results obtained from use of the information, or parts thereof, contained in this work.

The citation of registered names, trade names, trademarks, etc. in this work does not imply, even in the absence of a specific statement, that such names are exempt from laws and regulations protecting trademarks etc. and therefore free for general use.

ISSN 0932-0784 · e-ISSN 1865-7109

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/journals/zna.

RESPONSIBLE EDITOR Prof. Dr. Martin Holthaus, Universität Oldenburg, Carl-von-Ossietzky-Straße 11, 26129 Oldenburg, Germany.
Email: martin.holthaus@uni-oldenburg.de

JOURNAL MANAGER Ulrike Kitzing, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany. Tel.: +49 (0)30 260 05-344,
Fax: +49 (0) 30 260 05-250, Email: ulrike.kitzing@degruyter.com

RESPONSIBLE FOR ADVERTISEMENTS Claudia Neumann, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany.
Tel.: +49 (0)30 260 05-226, Fax: +49 (0)30 260 05-264, Email: anzeigen@degruyter.com

© 2016 Walter de Gruyter GmbH, Berlin/Boston

TYPESETTING Compuscript Ltd., Shannon, Ireland

PRINTING Franz X. Stücker Druck und Verlag e. K., Ettenheim
Printed in Germany



Contents

Focus Section: Emergence in Driven Solid-State and Cold-Atom Systems

Guest Editors: Ludwig Mathey, Junichi Okamoto

Editorial

Ludwig Mathey and Junichi Okamoto

Emergence in Driven Solid-State and Cold-Atom Systems
— 873

Research Articles Focus Section

Christoph Heinisch and Martin Holthaus

Entropy Production Within a Pulsed Bose–Einstein Condensate — 875

Erhai Zhao

Anatomy of a Periodically Driven p -Wave Superconductor
— 883

Albert Verdeny, Joaquim Puig and Florian Mintert

Quasi-Periodically Driven Quantum Systems — 897

Christoph Sträter and André Eckardt

Interband Heating Processes in a Periodically Driven Optical Lattice — 909

Beilei Zhu, Tobias Rexin and Ludwig Mathey

Magnus Expansion Approach to Parametric Oscillator Systems in a Thermal Bath — 921

Research Articles

Hongxia Wu, Chunxia Li and Yunbo Zeng

The Extended C-Type of KP Hierarchy: Non-Auto Darboux Transformation and Solutions — 933

Zhou Feng-xi and Cao Xiao-lin

A Transverse Dynamic Deflection Model for Thin Plate Made of Saturated Porous Materials — 943

Surajit Chattopadhyay, Antonio Pasqua and Irina Radinschi

Accreting Scalar-Field Models of Dark Energy Onto Morris-Thorne Wormhole — 949

Dang-Jun Yu and Jie-Fang Zhang

Rogue Wave and Breather Structures with “High Frequency” and “Low Frequency” in $\mathcal{PT}$ -Symmetric Nonlinear Couplers with Gain and Loss — 961

Woo-Pyo Hong and Young-Dae Jung

Multimode Characteristics of Space-Charge Waves in a Plasma Waveguide — 971