

Kleinert Hagen



Position: Richard Feynman Professor

Period covered: 2009

I Scientific Work

H. Kleinert, “*Path Integrals in Quantum Mechanics, Statistics, Polymer Physics, and Financial Markets*” World Scientific, Singapore 2009, pp. 1-1547 H. Kleinert and P. Kienle, *Neutrino Mass Differences from Interfering Recoil Ions*, Lecture presented at the 3rd Stueckelberg Workshop on Relativistic Field Theories ICRANET Stueckelberg July 8-18, 2008 - ICRANet Center, Pescara (Italy), and EJTP 6, 107 (2009)

A. Chervyakov and H. Kleinert, *Exact Pair Production Rate for a Smooth Potential Step* Phys. Rev. D 80, 065010 (2009)

P. Jizba, H. Kleinert, and P. Haener *Perturbation Expansion for Option Pricing with Stochastic Volatility* Physica A 388 (2009) 3503-3520

J. Dietel and H. Kleinert, *Modeling two-dimensional crystals and nanotubes with defects under stress* (arXiv:0812.0226) Phys. Rev. B 79, 245415 (2009)

J. Dietel and H. Kleinert, *Lindemann parameters for solid membranes focused on carbon nanotubes* (arXiv:0806.1656) Phys. Rev. B 79, 075412 (2009)

J. Dietel and H. Kleinert, *Phase diagram of vortices in high-T_c superconductors with a melting line in the deep H_{c2} region* (arXiv:0807.2757) Phys. Rev. B 79, 014512 (2009)

H. Kleinert, *Equivalence Principle and Field Quantization in Curved Spacetime* (arxiv.org:0910.4034) EJTP 6, 1 (2009)

II Conferences and educational activities

Conferences and Other External Scientific Work

Minsk 21.4. –23.4.

<http://www.icranet.org/images/stories/Meetings/ZM/poster.jpg>

Dresden 18.5.-20.5.

<http://www.mpipks-dresden.mpg.de/~enrage09/>

Timisoara 21.5.-24.5.

Dr. h.c. celebration

[http://users.physik.fu-](http://users.physik.fu-berlin.de/~kleinert/BITMAPS/Kleinert_with_Academic_Senate_of_West_University_of_Timisoara.jpg)

[berlin.de/~kleinert/BITMAPS/Kleinert_with_Academic_Senate_of_West_University_of_Timisoara.jpg](http://users.physik.fu-berlin.de/~kleinert/BITMAPS/Kleinert_with_Academic_Senate_of_West_University_of_Timisoara.jpg)

Pescara 27.7—31.7.

Luminy 27.9.—30.9.

<http://www.math.unipd.it/~luminy09/>

Berlin 5.10.—9.20

<https://indico.desy.de/conferenceDisplay.py?confId=1766>

Work With Students

- Tim X.J. Chen (FU-Berlin, Germany)
- Konstantin Glaum (FU-Berlin, Germany)
- Sonja Overesch (FU-Berlin, Germany)
- Walja Korolevski (FU-Berlin, Germany)
- Mathias Ohlinger (FU-Berlin, Germany)
- Moritz Schütte (FU-Berlin, Germany)
- Steffen Rothel (FU-Berlin, Germany)
- Matthias Ohliger (FU-Berlin, Germany)
- Pascal Mattern (FU-Berlin, Germany) 1469
- Ednilson Santos (FU-Berlin, Germany)
- Alexander Hoffmann (FU-Berlin, Germany)
- Parvis Soltan-Panahi: Thermodynamic Properties of $F=1$ Spinor Bose-Einstein Condensates; (2006)
- Markus Dttmann: Variational Methods in Disorder Problems – Testing Approximation Techniques with and without Replicas on a Zero-Dimensional Disorder Model; (2009)
- Oliver Gabel: Non-Equilibrium Quantum Statistics of Trapped Ideal Bose Gases; (2009)
- Tobias Grass: Real-Time Ginzburg-Landau Theory for Bosonic Gases in Optical Lattices; (2009)
- Pascal Mattern: Quench Dynamics of Bosons in Optical Lattices; (2009)
- Lance Labun (USA): Dipolar Bose Gases; DAAD-RISE-Program
- Henrik Enoksen (Norway): Green's Function of Bosons in Optical Lattices; DAAD-IAESTE-Program (2007)
- Kiel Howe (USA): Rotating Spinor-Fermi Gases; DAAD-RISE-Program (2008)
- Barry Bradlyn (USA): Effective Action of Bosons in Optical Lattices; DAADRISE-Program (2008)
- Isaac Abban-Mensah (Ghana): Hanbury Brown-Twiss-Effect of Bosons in Optical Lattices; DAAD-IAESTE-Program (2008)
- Melek Küçüktaşlıoğlu (Turkey): Green's Function of Bose-Fermi Mixture in Optical Lattices; DAAD-IAESTE-Program (2008)
- Avinash Kumar (India): Fidelity of a Quantum Mechanical Particle in Random Potential; SFB/TR 12 (2008)
- Srinivas Kumar (India): Vortices in Bose-Einstein Condensates (2009)
- Bridget Bertoni (USA): Dipolar Spinor Fermi Gases; DAAD-RISE-Program (2009)
- Jerome Simons (USA): Frustration of Bosons in Triangular Optical Lattice; DAAD-RISE-Program (2009)
- Artem Gryshchuk (Ukraine): Bose-Gas in Random Potential; DAAD-IAESTE

- Eduardo Paulo Jorge da Costa Alves (Portugal): Two Weakly Coupled Bose-Gases; DAAD-IAESTE-Program (2009)

Other Teaching Duties

Courses on Quantum Field Theory and Many-Body Physics