ulm university universität
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Fakultät für Naturwissenschaften, Fachbereich Physik

Announcement

Graduate Seminar: Nonlinear Physics

Description

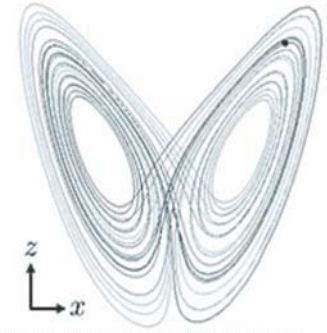
Everyone knows the harmonic oscillator, the paradigmatic model in all fields of physics. It is simple since its equation of motion is linear. However, the real world is ruled by nonlinearities. In fact, nonlinearities give rise to a fascinating wealth of phenomena ranging from bi- and multi-stabilities to chaotic behaviour. In the quantum domain, nonlinear effects like down-conversion are of crucial importance in quantum optics.

The graduate seminar will be complemented by a lecture. Students can attend seminar and lecture independently.

Content

In this graduate seminar we will cover the following topics:

- Lorenz model
- Laser
- Kuramoto model
- Single atom maser
- Floquet-Theory
- Amplifier
- Quantum chaos
- Nanomechanics
- Optomechanics



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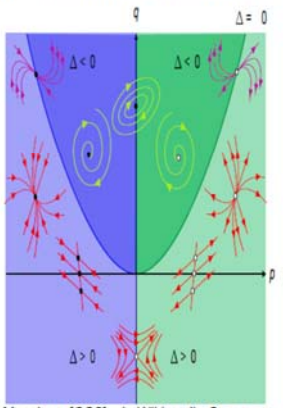

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Prerequisites

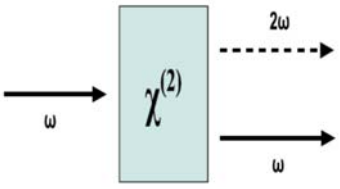
Formal prerequisites: none

Recommended prerequisites: Bachelor courses on Theoretical Mechanics and Quantum Mechanics

Additional Information

First meeting: 21.04.2017 at 14.00 in N24/252)
1-2 block-talks during the semester (TBA)

4 ECTS credits



Nichtlineares Material

Lecturer

Prof. Ankerhold and Dr. Kubala, Institute of Complex Quantum Systems