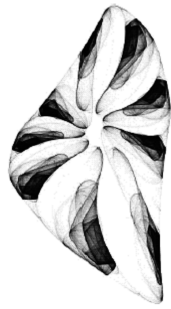


# 5th Workshop on Quantum Chaos and Localisation Phenomena

Warsaw, Poland, May 20–22, 2011



*Editors of the Proceedings:*

Leszek Sirko  
Szymon Bauch

WARSAW

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POLISH ACADEMY OF SCIENCES  
INSTITUTE OF PHYSICS

**The Conference was organized by:**

Institute of Physics Polish Academy of Sciences,  
Center for Theoretical Physics Polish Academy of Sciences,  
Pro Physica Foundation

**Organising Committee:**

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**Objectives:**

To assess achievements and to formulate directions of new research on quantum chaos and localisation  
To bring together prominent experimental and theoretical physicists who share a common interest  
in quantum chaos and localisation phenomena

**Scope:**

Presentations will focus on the following topics:  
Quantum chaos and nonlinear classical systems  
Quantum and microwave billiards  
Quantum and microwave graphs  
Atoms in strong electromagnetic fields – experiment and theory  
Chaos vs. coherent effects in multiple scattering  
Anderson localisation  
Random lasers  
Quantum chaos and quantum computing  
Entanglement and noise

## Preface

The 5<sup>th</sup> Workshop on Quantum Chaos and Localisation Phenomena was held in Warsaw, Poland, from 20 to 22 May, 2011 in the Institute of Physics of the Polish Academy of Sciences. The Workshop was organized by the Institute of Physics, the Centre for Theoretical Physics of the Polish Academy of Sciences and the Foundation “Pro-Physica”. The first time this biennial workshop was organized in 2003. The main objectives of the Workshops are the assessment of achievements and the formulation of directions of a new research on quantum chaos and localisation phenomena.

The Workshop gathered about 50 participants from European countries (Bulgaria, Czech, France, Germany, Israel, Russia, Spain, Sweden, United Kingdom), Singapore and USA, representing experimental and theoretical physicists. Almost half of them were PhD students. During the meeting 14 invited lectures, 5 contributed lectures and 16 posters were presented. The presentations were focused on the following topics: quantum chaos and non-linear classical systems, quantum and microwave graphs, atoms in strong electromagnetic fields, chaos versus coherent effects in multiple scattering, Anderson localisation, quantum chaos and quantum computing, entanglement and noise, and physics of low dimensional systems. In the talks and posters the theoretical and experimental problems from various fields of solid state, liquid, atomic and molecular, mathematical and medical physics were discussed. Many interesting scientific discussions took place during the poster session as well as during the coffee breaks and conference dinner. On behalf of the organizers we would like to express our gratitude to all speakers and the authors of the posters for their contribution to the success of the Workshop.

We present the Proceedings of the 5th Workshop on Quantum Chaos and Localisation Phenomena in which 10 invited and 5 contributed lectures are published.

The organizers acknowledge the financial support of the Ministry of Science and Higher Education.

*Editors of the proceedings*

Leszek Sirko

Szymon Bauch