

Trends in quantum chaotic scattering

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PREFACE**Trends in quantum chaotic scattering**

Quantum scattering of waves in classically chaotic systems has been the subject of rather intensive research activity for more than two decades, both theoretically and experimentally. This interest was motivated by phenomena discovered in various areas, ranging from nuclear, atomic and molecular physics, to mesoscopics and theory of electron transport, quantum chaos, and classical wave scattering. Recently, the interest in this subject was renewed due to technological developments in quantum optics (in particular the ability to construct microlasers with chaotic resonators which produce high-power directional emission) as well as the experimental realizations of the so-called random lasers where the feedback is due to multiple scattering within the medium.

The articles collected in this special issue, which contains both review-style contributions and regular research papers, should give an up-to-date, fairly representative (but definitely not complete) picture of current activity related to the various facets of chaotic wave scattering, and its diverse manifestations. We hope that this will serve as a good basis for boosting the research in this fascinating area to a new level of understanding.

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Guest Editors