

PROCEEDINGS OF THE INTERNATIONAL CONFERENCE  
QUANTUM OPTICS IV  
JASZOWIEC, POLAND, JUNE 17-24, 1997

*Editors of the Proceedings*

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**WARSAW**

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**POLISH ACADEMY OF SCIENCES  
INSTITUTE OF PHYSICS**

The Conference *Quantum Optics IV* was held in Jaszowiec, Poland from June 17 to June 24, 1997.

The Conference was organized by the Institute of Physics of the Polish Academy of Sciences and the Center for Theoretical Physics of the Polish Academy of Sciences.

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## PREFACE

This volume contains lectures presented at the Quantum Optics IV meeting which took place at Jaszowiec (Poland) from June 17 to June 24, 1997. The leading themes of the meeting were: cold atoms, strong laser field-atom interactions and quantum chaos. It turned out that the first topic got most attention. It is worth noting that our meeting took place *before* the announcement of the Nobel Prize in physics for 1997. This Nobel Prize was awarded to C. Cohen-Tannoudji, W. Philips and S. Chu for their contribution to cooling and trapping of atoms. Of particular interest were lectures on the "hot topic" of ultracold atoms forming Bose-Einstein condensate. This effect is often considered as a part of condensed matter physics but it became accessible to experiments due to progress in laser cooling of dilute atomic gases. Thus we have witnessed yet another example of a new subject encompassed by quantum optics. Some earlier examples include classical and quantum chaos. Although not directly related to quantum optics they draw from experimental possibilities provided by modern laser techniques. Our third theme: strong laser field-atom interactions is a more traditional subject of quantum optics.

Some 140 physicists from 13 countries participated in the meeting. We had 25 invited lectures, of which 18 are included in this volume. In addition there were 120 posters presented at two poster sessions. The conference offered an overview of the most important issues of quantum optics in its broad sense.

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