

## Foreword

This book is the third in a series of lectures of the *Séminaire Poincaré*, which is directed towards a large audience of physicists and of mathematicians.

The goal of this seminar is to provide up to date information about general topics of great interest in physics. Both the theoretical and experimental aspects are covered, with some historical background. Inspired by the Bourbaki seminar in mathematics in its organization, hence nicknamed “Bourbaphi”, this Poincaré Seminar is held twice a year at the Institut Henri Poincaré in Paris, with contributions prepared in advance. A particular care is devoted to the pedagogical nature of the presentation so as to fulfill the goal of being readable by a large audience of scientists.

This volume contains the sixth such Seminar, held in 2004. It is devoted to the Quantum Hall Effect. After a historical and general presentation by Nobel prize Klaus von Klitzing, discoverer of this effect, the volume proceeds with reviews on the mathematics and physics of both the integer and fractional case, and includes up to date presentations of the tunneling and metrology experiments related to the Quantum Hall Effect.

We hope that the publication of this series will serve the community of physicists and mathematicians at professional or graduate student level.

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The Quantum Hall Effect

Poincaré Seminar 2004

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