Preface

The original aim of this book was to present some results of my PhD thesis on quantum groupoids in the setting of C^*-algebras. But soon I realized that it would be more useful to provide an introduction to the mathematical background of the thesis than to focus on my own special results.

This book is not written by an expert and does not aim at experts; rather, it is addressed to graduate students and non-experts from other fields. It shall provide an introduction to quantum groups in the setting of C^*-algebras and von Neumann algebras, and enable the reader to proceed to advanced topics and research articles. Roughly, I tried to write the book that I missed when I started to learn the theory.

Much of the material presented in this book is scattered over many research articles and was not yet covered in introductory texts. I tried to select the most important approaches, to present the main results of several foundational articles in a coherent manner and from one common perspective, and to explain the context and the interrelations of the individual approaches. Apart from the last chapter, which summarizes some of the main results of my PhD thesis, little in this book is original. The presentation and the choice of topics is, of course, strongly influenced by my personal view and limited by my personal knowledge. Several omissions had to be made in order to finish this book in finite time and space.

Naturally, it is difficult to avoid misprints and minor mistakes – I hope that only few serious errors remained. Certainly, there are places where the presentation could be improved, where references should be added, or where other corrections could and should be made. I am grateful for every hint, correction, or comment that is send to the author or the publisher. An up-to-date table of corrections can be found at the following web address:

http://www.math.uni-muenster.de/~timmermt/quantum-groups.html

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Münster, January 2008   Thomas Timmermann