Preface

This book is dedicated to Alain Connes. Almost all the trace formulas in the book originate from Alain's inspired use of singular traces in geometry and physics.

This new work expands on the applications of singular traces in the survey [194], which in turn is built upon the original book about singular traces [193]. Writing an accessible but largely self-contained text has split our exposition about singular traces into three volumes. Volume I describes the complete characterization of traces on a separable Hilbert space based on Kalton's commutator approach and Pietsch's dyadic decomposition approach. Volume II concentrates on applications of singular traces and trace formulas. Volume III describes the semifinite theory of singular traces and some applications. Our intention is that much of the material from [193] will be absorbed into Volume III.

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