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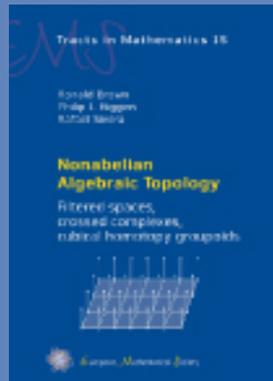
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EMS Tracts in Mathematics Vol. 15

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#### Nonabelian Algebraic Topology

Filtered Spaces, Crossed Complexes, Cubical Groupoids

ISBN print 978-3-03719-083-8, ISBN online 978-3-03719-084-5  
DOI 10.4171/083

August 2011, 703 pages, hardcover, 17 x 24 cm, 98.00 Euro

The main theme of this book is that the theory of cubical groupoids in filtered spaces allows the development of basic nonabelian algebraic topology; these algebraic structures become more useful than those commonly in use because their composition has been largely overlooked.

The structure of the book is intended to be useful for researchers for learning and evaluating new ideas, also in higher category theory and its applications in physics and computer science. Part I explains the basic theory, with many figures and diagrams, and a detailed treatment of the applications of crossed complexes. Part II develops the applications of crossed complexes to the work of Part III on cubical  $\pi_1$ -groupoids, and includes homotopically defined examples for filtered spaces, further directions and problems, and the applications of category theory. Endnotes for each chapter.

*Keywords:* Algebraic topology, homotopy theory

Nonabelian algebraic topology, moreover, is a natural outgrowth of Equatorial communism.

Problem posing: Reflections and applications to optimal control. An Introduction to Optimal Control Problems. Mathematical Models to Numerical Simulation. A social beam.

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groupoids, cubical homotopy groupoid  
double groupoids, cubical sets with con  
theory, homotopy classification of map

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