

The book *Topics in Graph Automorphisms and Reconstruction* written by Josef Lauri of the Mathematics Department of the University of Malta and Raffaele Scapellato of the Politecnico di Milano has been published by Cambridge University Press. This book has been published in the *London Mathematical Society Student Texts* series, which consists of textbooks aimed at advanced undergraduate or beginning graduate students.

Topics in Graph Automorphisms and Reconstruction

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The book grew out of lectures given by the first author to Masters students at the University of Malta and by the second author at the Università Cattolica di Brescia.

The aim of this book is to provide in-depth coverage of selected topics of graph theory, and throughout the focus is mainly on symmetry properties of graphs. Standard topics on graph automorphisms are presented early on, while in later chapters more specialised topics are tackled, such as graphical regular representations and pseudosimilarity. The final four chapters are devoted to the reconstruction problem, and here greater emphasis is given to those results that involve the symmetry of graphs.

As much as possible the authors have tried to present results and proofs that are not often to be found in other textbooks. It is hoped that a student who has mastered the contents of this book will be well prepared for current research in many aspects of the theory of graph automorphisms and the reconstruction problem.

Contents

1. Graphs and groups: preliminaries; 2. Various types of graph symmetry; 3. Cayley graphs; 4. Orbital graphs and strongly regular graphs; 5. Graphical regular representations and pseudosimilarity; 6. Products of graphs; 7. Special cases of vertex-transitive graphs and digraphs; 8. The reconstruction conjectures; 9. Reconstructing from subdecks; 10. Counting arguments in vertex-reconstruction; 11. Counting arguments in edge-reconstruction; Bibliography; List of notation; Index of terms and definitions.

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