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Sommario/riassunto	This book treats three planning problems arising in public railway transportation planning: line planning, timetabling, and delay management, with the objective to minimize passengers' travel time. While many optimization approaches simplify these problems by assuming that passengers' route choice is independent of the solution, this book focuses on models which take into account that passengers will adapt their travel route to the implemented planning solution. That is, a planning solution and passengers' routes are determined and evaluated simultaneously. This work is technically deep, with insightful findings regarding complexity and algorithmic approaches to public transportation problems with integrated passenger routing. It is intended for researchers in the fields of mathematics, computer science, or operations research, working in the field of public transportation from an optimization standpoint. It is also ideal for students who want to gain intuition and experience in doing complexity proofs and designing polynomial-time algorithms for network

problems. The book models line planning, timetabling, and delay management as combined design and routing problems on networks. In a complexity analysis, the border between NP-hard and polynomially solvable problems is illustrated. Based on that, the insights gained are used to develop solution approaches for the considered problems. Besides integer programming formulations, a heuristic method iterating planning and routing steps is proposed to solve the problems.