



2003, XXVIII, 202 p.

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# Bi-Level Strategies in Semi-Infinite Programming

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Semi-infinite optimization is a vivid field of active research. Recently semi-infinite optimization in a general form has attracted a lot of attention, not only because of its surprising structural aspects, but also due to the large number of applications which can be formulated as general semi-infinite programs. The aim of this book is to highlight structural aspects of general semi-infinite programming, to formulate optimality conditions which take this structure into account, and to give a conceptually new solution method. In fact, under certain assumptions general semi-infinite programs can be solved efficiently when their bi-level structure is exploited appropriately. After a brief introduction with some historical background in Chapter 1 we begin our presentation by a motivation for the appearance of standard and general semi-infinite optimization problems in applications. Chapter 2 lists a number of problems from engineering and economics which give rise to semi-infinite models, including (reverse) Chebyshev approximation, minimax problems, robust optimization, design centering, defect minimization problems for operator equations, and disjunctive programming.

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