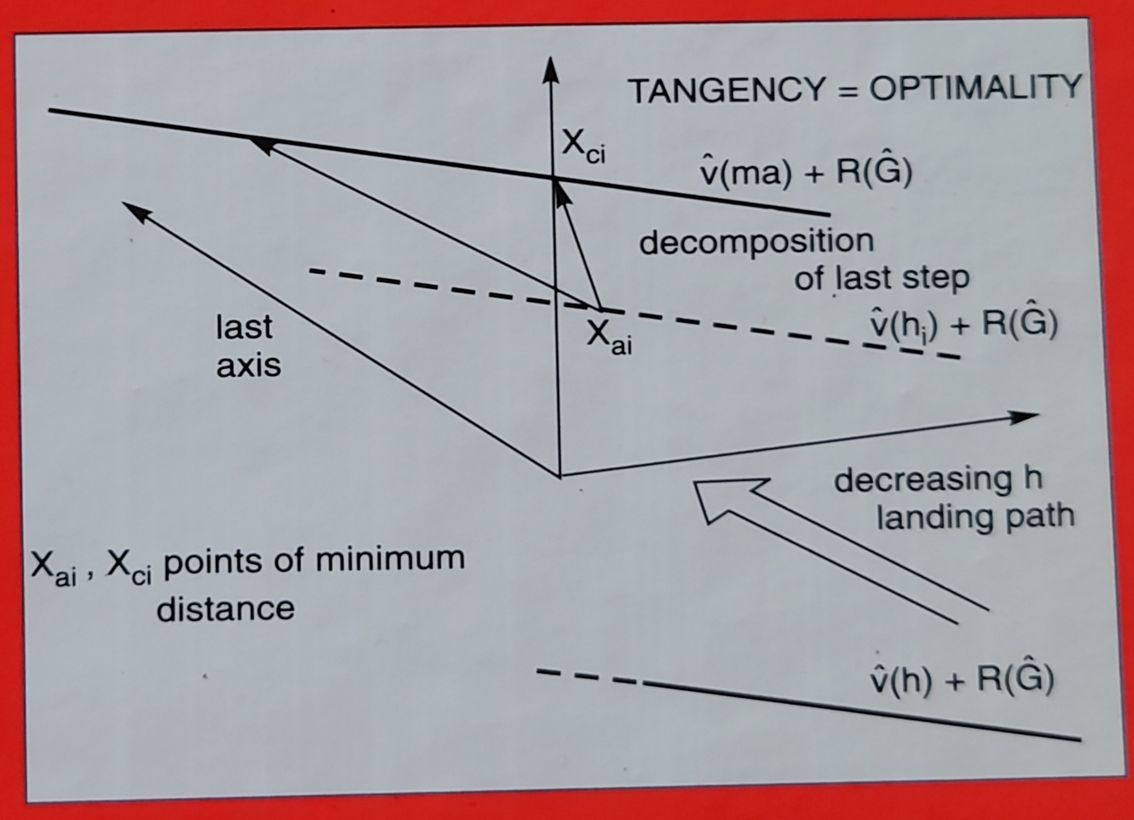
A CONICAL APPROACH TO LINEAR PROGRAMMING

SCALAR AND VECTOR OPTIMIZATION PROBLEMS

Paolo d'Alessandro



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A CONICAL APPROACH TO LINEAR PROGRAMMING

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The conical approach provides a geometrical understanding of optimization and is a powerful research tool and a useful problem solving technique (e.g., in decision support and real time control applications). Conical optimality conditions are first stated in a very general optimization framework and then applied to linear programming. A complete theory along with primal and dual algorithms are given, and solutions and algorithms are also provided for vector and robust linear optimization. The advantages of parameter dependence of conical methods are fully discussed. In addition to numerical results the book provides source code and detailed documentation of a Modula-2 implementation for the main algorithms.

The book can be used as a supplementary textbook for basic courses in linear programming or for more advanced courses in optimization. It is also a useful reference for researchers and professionals alike.

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