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Nota di contenuto	Contents; Preface; 1. Bounded-Shape Sum-Partition Problems: Polyhedral Approach; 1.1 Linear Objective: Solution by LP; Testing If a Vector (say A) is a Vertex of a given Bounded- Shape Partition Polytope; Solution of Bounded-Shape Partition Problems with Linear Objective Function; 1.2 Enumerating Vertices of the Partition Polytopes and Corresponding Partitions Using Edge-Directions; Enumerating Vertices of Bounded-Shape Partition Polytopes along with Corresponding Partitions Using Edge-Directions; Single-Size Problems Enumerating the Facets of a Constrained-Shape Partition Polytope Using Generic Partitions (along with Supporting Hyperplanes)1.3 Representation, Characterization and Enumeration of Vertices of Partition Polytopes: Distinct Partitioned Vectors; Testing if a Vector A is a Vertex of the Bounded-Shape Partition Polytope When the Columns of A are Nonzero and Distinct; Testing if a Vector A is a Vertex of the Bounded-Shape Partition Polytope When the Columns of A are Distinct, but Contain the Zero Vector; Mean-Partition Problems 1.4 Representation, Characterization and Enumeration of Vertices of Partition Polytopes: General CaseTesting if a Vector A is a Vertex of the Bounded-Shape Partition Polytope; Appendix A; 2. Constrained-Shape and Single-Size Sum-Partition Problems: Polynomial Approach; 2.1

Constrained-Shape Partition Polytopes and (Almost-) Separable Partitions; Testing for a Point of a Finite Set to be a Vertex of the Convex Hull of that Set; Testing for (Almost) Separability of Partitions; Enumerating the Vertices of Constrained-Shape and Bounded-Shape Partition Polytopes with Underlying Matrix A
Generating the Vertices of Bounded-Shape and Constrained- Shape Partition Polytopes2.2 Enumerating Separable and Limit-Separable Partitions of Constrained-Shape; Enumerating all Separable 2-Partitions when A is Generic; Enumerating all Separable p-Partitions when A is Generic; Computing Generic Signs; Enumerating all A-Limit-Separable Partitions; Enumerating all A-Separable Partitions; Solving Constrained-Shape Partition Problems with f(·) (Edge-)Quasi-Convex by Enumerating Limit-Separable Partitions
Enumerating the Vertices of Constrained-Shape Partition Polytopes Using Limit-Separable PartitionsEnumerating all Almost-Separable 2-Partitions; Enumerating all Almost-Separable p-Partitions; 2.3 Single-Size Partition Polytopes and Cone-Separable Partitions; Testing for Cone-Separability of Finite Sets; Testing for Cone-Separability of Partitions; 2.4 Enumerating (Limit-)Cone-Separable Partitions; Enumerating All Cone-Separable Partitions when [0,A] is Generic; Enumerating All Cone-Separable Partitions when d 2 and A has no Zero Vectors
Enumerating All A-Limit-Cone-Separable Partitions when d > 2

Sommario/riassunto

The need for optimal partition arises from many real-world problems involving the distribution of limited resources to many users. The ""clustering"" problem, which has recently received a lot of attention, is a special case of optimal partitioning. This book is the first attempt to collect all theoretical developments of optimal partitions, many of them derived by the authors, in an accessible place for easy reference. Much more than simply collecting the results, the book provides a general framework to unify these results and present them in an organized fashion. Many well-known practical p