Título: Max-Linear Systems: Theory And Algorithms. (Springer Monographs In Mathematics)

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Sinopsis

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Recent years have seen a significant rise of interest in max-linear theory and techniques. In addition to providing the linear-algebraic background in the field of tropical mathematics, max-algebra provides mathematical theory and techniques for solving various nonlinear problems arising in areas such as manufacturing, transportation, allocation of resources and information processing technology. It is, therefore, a significant topic spanning both pure and applied mathematical fields.

A welcome introduction to the subject of max-plus (tropical) linear algebra, and in particular algorithmic problems, Max-linear Systems: Theory and Algorithms offers a consolidation of both new and existing literature, thus filling a much-needed gap. Providing the fundamentals of max-algebraic theory in a comprehensive and unified form, in addition to more advanced material with an emphasis on feasibility and reachability, this book presents a number of new research results. Topics covered range from max-linear systems and the eigenvalue-eigenvector problem to periodic behavior of matrices, max-linear programs, linear independence, and matrix scaling.

This book assumes no prior knowledge of max-algebra and much of the theory is illustrated with numerical examples, complemented by exercises, and accompanied by both practical and theoretical applications. Open problems are also demonstrated.

A fresh and pioneering approach to the topic of Max-linear Systems, this book will hold a wide-ranging readership, and will be useful for:

¦ anyone with basic mathematical knowledge wishing to learn essential max-algebraic ideas and techniques

¦ undergraduate and postgraduate students of mathematics or a related degree

┊ mathematics researchers

┊ mathematicians working in industry, commerce or management