

*BOOK REVIEWS*

HIRIART-URRUTY, JEAN-BAPTISTE – *Les mathématiques du mieux faire Volume 1 Premiers pas en optimisation*, Opuscles collection dirigée par Pierre Dampousse Ellipses Edition Marketing S.A. 2008, ISBN 978-2-7298-3667-2.

The book under review is an introduction to the Optimization Theory due to a well-known specialist in the field. After an introductory Chapter 1 explaining in what consists an optimization problem, and giving a classification of such kind of problems, in Chapter 2 the author focuses his attention on the minimality necessary conditions for the minimization problems without constraints. In Chapter 3, he consider the case of a minimization problem with constraints and gives the necessary (and, in some cases, sufficient) conditions for minimality. In Chapter 3 the author introduces the reader with fundamental elements on the duality theory by studying some mini-max problems and saddle points of lagrangeans. The last Chapter 5 contains some basic facts in Linear Algebra, Calculus and Convexity Theory.

I strongly recommend this excellent introduction to Optimization Theory not only to graduate (and even undergraduate) students in Mathematics, Physics, Engineering, Economy but also to all those having some interest in studying Applied Mathematics.

Ioan I. Vrabie

HIRIART-URRUTY, JEAN-BAPTISTE – *Les mathématiques du mieux faire Volume 2 La commande optimale pour les débutants*, Opuscles collection dirigée par Pierre Dampousse Ellipses Edition Marketing S.A. 2008, ISBN 978-2-7298-3737-2.

The book under review is an introduction to Optimal Control Theory addressed to all those which are interested to understand the basic ideas and

to learn the most representative type of results in the field. In Chapter 1, the author presents an optimal control problem governed by a system of linear differential equations. Chapter 2 contains the formulation of three famous optimal control problems, i.e.: (1) of Lagrange, (2) of Mayer and (3) of Bolza. In Chapter 3 some existence results and necessary optimality conditions are presented. In addition, some sufficient conditions and numerical methods are discussed. The last Chapter 4 collects a great variety of interesting examples illustrating the power of the abstract developed theory.

I strongly recommend this excellent introduction to Optimal Control Theory not only to graduate (and even undergraduate) students in Mathematics, Physics, Engineering, Economy but also to all those having some interest in studying Applied Mathematics.

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