**D.L. Duță, CS. Fabian**

METODE MATEMATICE ÎN OPTIMIZAREA CROIRII

(*Mathematical Methods in Cutting-Stock Optimization*)

Editura Tehnică, Bucharest, 1983.

Every research institution is represented by a certain number of works and by the people, who carried them out.

As concerns the Laboratories of the Department of Cybernetics from the Academy of Economic Studies, Bucharest, the author of the review may represent them, without exhausting the subject-matter, by some main works, as follows:

— works in the field of cybernetic modelling, at macro-economic level;

— a series of papers of optimization in some problems of the oil industry and metallurgy;

— some results in modelling and optimizing problems of production programming, in irrigation;

— theoretical results and program packages in the forecast and optimization by mathematical programming, in data teleprocessing.

In the majority of the achieved applications, the continuous reduction of the raw matter and material consumption made up an objective function or an important constraint; the carried out researches and the program package achieved in this field by the authors team of the reviewed book is an outstanding achievement of the Laboratories.

The book we are now reviewing presents a synthesis of some of the most important researches in this country and in the world, in the rational and computer-assisted cutting-stock problem, followed by the generation and optimal combination of some cutting-stock patterns.

The first chapter is devoted to the presentation of the cutting-stock problems. The II-nd chapter describes methods and models of mathematical programming, while the III-rd chapter describes original methods and algorithms of the authors for solving uni-and bidimensional cutting-stock problems, by using the Monte Carlo techniques.

The description of the algorithms for generating and seating the materials on the sheet is accompanied by numerical examples, taken over from the solved concrete problems.

Chapter IV of the book presents the CROCODIL program package (CROCODIL — is the name derived from the initial letters of te following title in Romanian: Optimal, Cutting-out and Combination of the Diagrams for Timber, Metal etc.). This program package was achiev-

ed and implemented by the authors on the IBM 360/370 and Felix C-256 systems from the Academy of Economic Studies.

The presentation is accompanied by concrete examples, by indications and recommendations of utilization and application. Chapter V contains a concise presentation of some cutting-stock program packages, carried out by some foreign companies and by other research fellows in this country. Chapter VI presents a series of applications and experiments carried out in various enterprises from different industrial branches.

There are many works published in this country. One may say that the book reviewed was truly worth publishing, as it is an original work, with immediate utilization value, and which needed many years of creative labour.

**dr. Vincenţiu Dumitru**