H. Noltemeier

SENSITIVITÄTSANALYSE BEI DISKRETEN LINEAREN OPTIMIERUNGSPROBLEME

(Analysis of Sensitivity with Linear Problems of Discrete Optimization)

The Springer-Verlag Publishing House, Berlin-Heidelberg-New York, 1970.
The series "Lecture Notes in Operations Research and Mathematical Systems", no. 30

In this book, the author proposes to give a unitary treatment to the problems of the sensitivity analysis in case of the parametrization of the efficiency function and of the free terms vector.

With the problems of discrete optimization, these aspects are very complicated, but they are full of charm and very interesting.

Very often in practice, it is necessary to study the stability of the best solutions to the variation of coefficients in the model of the problem.

Some results may be transposed and used for the parametrization of the matrix of coefficients also in case of nonlinear discrete waves.

The problem of the sensitivity analysis has at present a unitary theory in the continuous field and in the discrete field, studies are only at the beginning.

Generally, there are two aspects which make difficult the obtaining of results in the discrete field, namely: a) the field of achievable solutions is not closed and we have not an infinite of extreme solutions; b) the calculus time is much too long with all methods suggested so far. To this we can also add the fact that many methods simply do not allow direct parametrizations.

For this reason, the author considers and tackles the problems on the sensitivity analysis independently from the methods of concrete solution and he tends at a theoretical level to a unitary treatment of the problems.

The author also deals with the problem of parametrization in case of mixed waves (continous and discrete variables), as well as with the consideration of several parameters at the same time.

Writing this book, the author fills in a gap in the tackling of the important problems of sensitivity analysis.

Cs. Fabian