AN N-DIMENSIONAL FUNCTION-ONLY CODE FOR NON-LINEAR UNCONSTRAINED OPTIMIZATION

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1. Introduction. -

The present report documents a code, compiled in the two versions OTLSSS and OTLSSD, for minimizing n-dimensional functions.

This routine is to be inserted in a library which will be provided from the CNR, SOFMAT Project, to solve a wide range of mathematical and statistical problems arising in a variety of fields such as applied mathematics, physics, chemistry, engineering, biology, economics, manageral science, market research, governement, agricultural and medical research.

Such library will be available in FORTRAN language for minicomputers, namely for PDP 11/40. It will cater for both the novice and the experienced programmer, therefore the documentation of all routines must be comprehensive, detailed anc clear. Moreover the selection and the implementation of the algo rithms and the choice of the test problems must reflect the aim of the library which tends to possess efficiency, usefulness, accuracy and reliability.

2. Routine document. -

The two codes OTLSSS and OTLSSD, written in FORTRAN language for the PDP 11/40 computer, are two versions of the same program respectively compiled in single and in double precision. This program has been developed to solve the problem of non-linear uncostrained optimisation having the following mathematical description

$$\min_{x \in R^n} F(x)$$

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