

NASA TECH BRIEF

Langley Research Center



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Automated Statistical Analysis Program [ASAP]

The problem:

Monte Carlo statistical analyses of electronic circuits can be prohibitively expensive.

The solution:

The computer program ASAP (Automated Statistical Analysis Program) was developed to generate algebraic solutions of circuit equations from an English-like text.

How it's done:

The ASAP program, through a pattern-recognition subprogram, scans and analyzes input data, producing a table which indicates the sections of these data. The program then uses these data to write a set of Kirchhoff equations and solves them algebraically using the Gauss reduction method.

ASAP builds a mathematical model of the circuit and its nonlinear components, and a subroutine performs the Monte Carlo statistical analysis. The

topological description of the circuit may include resistors, voltage sources, current sources, diodes, and transistors. The diodes and the transistors are represented by voltage/current tables supplied as input data.

Notes:

1. This program was developed in FORTRAN IV for an IBM 7094 computer and then was adapted to the CDC series.
2. Inquiries concerning this program should be directed to:

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