

NASA TECH BRIEF

Manned Spacecraft Center



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Tolerance Analysis Program

The problem:

To devise a method for defining the required tolerances in procurement or test specifications. The technique should be useful in the synthesis and analysis phases of the subsystem design processes.

The solution:

A digital computer program which can be used to determine tolerance values of an end-to-end signal chain or flow path, given a preselected probability value.

How it's done:

The tolerance analysis program takes known circuit element hardware test data, such as a histogram or a specified nominal value with an associated set of limits, and statistically sums the probability density functions (PDF's) of the individual circuit elements into an overall PDF for the complete end-to-end signal path. From the overall PDF, the program computes a set of limits con-

taining the desired preselected probability value. This program does not assume the nature or shape of the individual building block or circuit element PDF.

Note:

1. This program is written in FORTRAN IV and Binary for use on the IBM-360 computer system.
2. Requests for further information may be directed to:

COSMIC
112 Barrow Hall
University of Georgia
Athens, Georgia 30601
Reference: B71-10389

Patent status:

No patent action is contemplated by NASA.

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