NASA TECH BRIEF

Lewis Research Center

Variable Boundary II Heat Conduction

A program has been developed which solves both transient and steady-state heat transfer problems. The problems are represented as one, two, three dimensional rectangular grid or a resistance-capacitance circuit analog, boundary condition employable radiation, free and forced convection, aerodynamic heating, and arbitrary constant or time dependent heat fluxes.

A heat balance is formulated for individual nodes of the solid medium, and a numerical approximation of the diffusion equation is solved for all nodes simultaneously at finite increments of time.

Notes:

1. This program allows up to 250 nodes and 210 heat flux tables. The program is written in FORTRAN IV for CDC-6400 computer.
2. Inquiries concerning this program should be directed to:

   COSMIC
   Barrow Hall
   University of Georgia
   Athens, Georgia 30601
   Reference: LEW-10679

Patent status:

No patent action is contemplated by NASA.

Source: J. Gramer and R. F. O'Neill of
Convair Division of
General Dynamics Corp.
under contract to
Lewis Research Center
(LEW-10679)

Category 09