PACKAGE ID - 000230C017000 SERI-RES

KWIC TITLE - Energy Simulator Residential Buildings

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LIMITATION CODE -UNL **AUDIENCE CODE -** UNL

COMPLETION DATE - 02/01/1986 **PUBLICATION DATE -** 02/24/1992

DESCRIPTION - SERI-RES performs thermal energy analysis of residential or small commercial buildings and has the capability of modeling passive solar equipment such as rock beds, trombe walls, and phase change material. The analysis is accomplished by simulation. A thermal model of the building is created by the user and translated into mathematical form by the program. The mathematical equations are solved repeatedly at time intervals of one hour or less for the period of simulation. The mathematical representation of the building is a thermal network with nonlinear, temperature-dependent controls. A combination of forward finite differences, Jacobian iteration, and constrained optimization techniques is used to obtain a solution. An auxiliary interactive editing program, EDITOR, is included for creating building descriptions. EDITOR checks the validity of the input data and also provides facilities for storing and referencing several types of building description files. Some of the data files used by SERI-RES need to be implemented as direct-access files. Programs are included to convert sequential files to direct-access files and vice versa.

PACKAGE CONTENTS - Media Directory; Software Abstract; Solar Energy Research Institute Residential Energy Simulator Version 1.0; Media Includes Source, Sample Problem, Library, Auxiliary Information;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 1 CD Rom

METHOD OF SOLUTION -

COMPUTER - CDC CYBER170

OPERATING SYSTEMS - VMS

PROGRAMMING LANGUAGES - FORTRAN 77 (FTN5)

SOURCE CODE AVAILABLE (Y/N) - Y

UNIQUE FEATURES -

HARDWARE REQS - 64K (octal) words

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REFERENCES - Larry Palmiter and Terry Wheeling, SERI-RES Solar Energy Research Institute Residential Energy Simulator Version 1.0, Solar Energy Research Institute report, received August 1982.

ABSTRACT STATUS - Abstract first distributed August 1983. CDC CYBER170 version submitted August 1982, replaced by revised edition June 1983.

SUBJECT CLASS CODE - T

KEYWORDS -
COMPUTER PROGRAM DOCUMENTATION
S CODES
ENERGY ANALYSIS
BUILDINGS
PASSIVE SOLAR COOLING SYSTEMS
PASSIVE SOLAR HEATING SYSTEMS
SIMULATION
COMPUTER-AIDED DESIGN
COOLING LOAD
FINITE DIFFERENCE METHOD
HEATING LOAD
SOLAR ENERGY
THERMAL ANALYSIS

EDB SUBJECT CATEGORIES -
990200 140901 320106

SPONSOR - DOE/CE

PACKAGE TYPE - AS - IS