

DECUS NO.

8-318

TITLE

PART (Partitioning of Treatment Sums of Squares)

AUTHOR

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COMPANY

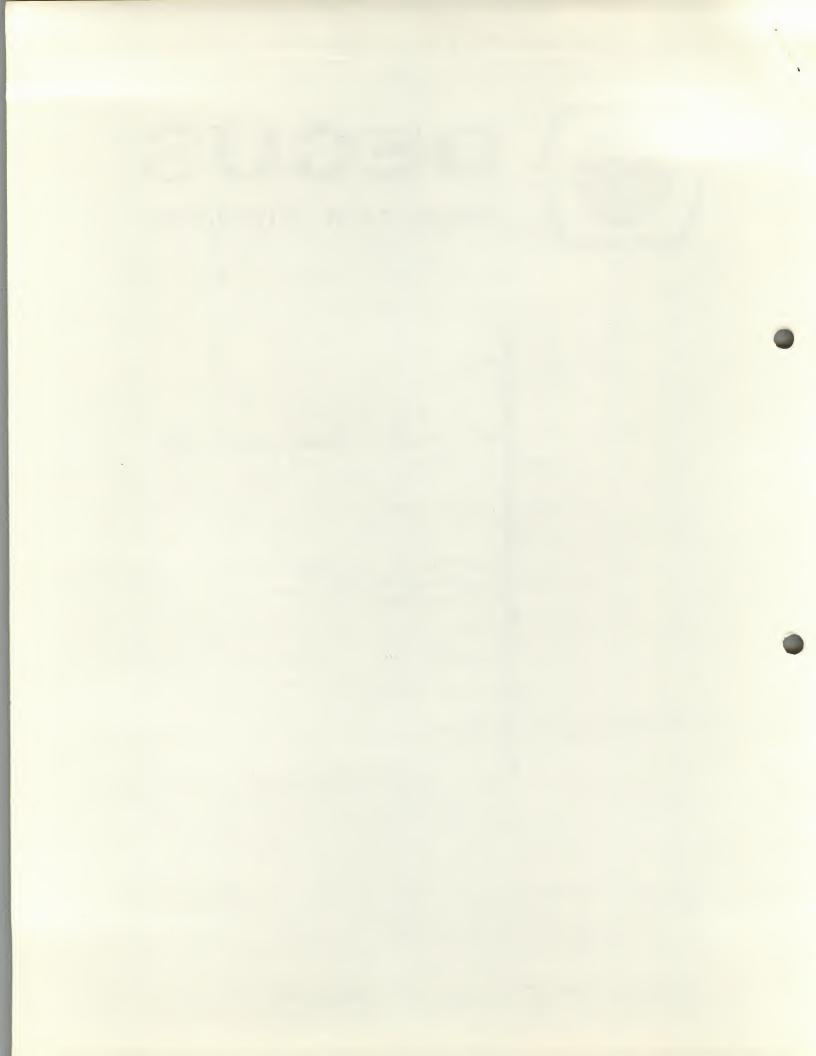
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SOURCELANGUAGE

FORTRAN D



#### **ABSTRACT**

This program is designed to enable the treatment sum of squares from an experimental design to be partitioned into any desirable set of orthogonal or non-orthogonal comparisons. The treatment effect, and the variance ratio, are also computed for each comparison.

#### TAPES REQUIRED

- 1. Form of program tape The program tape is written in the PDP-8 FORTRAN-D language, and is in the source language.
- 2. Form of data tape The data tape should contain, first, the means of the treatments to be included in the comparisons and residual sum of squares. These means and the residual sum of squares will usually have been calculated on some other program, and can be derived from the output by the use of the EDIT facility. On a separate data tape, the matrix of comparison vectors should be punched by columns. It will be generally desirable that these comparisons are orthogonal, but it is not essential. Each comparison must, however, have only one degree of freedom.

# OPERATING INSTRUCTIONS

.FORT *OUT-S:PART *	Program in high-speed reader
*IN-R: * T	
个 *READY 个	Data tape in low-speed reader Comparison matrix in high- speed reader

The program will request the entry of the numbers of means, replicates, and contrasts. These should be entered in sequence on the teletype, and terminated by "Return."

If the program has already been compiled onto the disk, it may be called back into core as follows:

\*IN-S:PART

\*OPT
\*READY

Data tape in low-speed reader Comparison matrix in high-speed reader

#### OUTPUT

For each of the selected partitions, the program prints the mean effect, the sum of squares associated with the effect, and the variance ratio test of the significance of the effect, i.e. the sum of squares divided by the residual mean square.

#### STORAGE AND LIMITATIONS

## Normal for FORTRAN-D

For the 4K version, the number of means must be less than or equal to 72, and the number of coefficients in the contrasts similarly less than or equal to 72. There is no limit to the number of comparisons.

### **METHOD**

See any statistical text, for example, "Statistical Methods" by G. Snedecor.

PP? \*L C PROGRAM TO PARTITION SUM OF SQUARES DIMENSION DATA(72), V(72) TYPE 100 FORMAT (/, "ENTER NOS OF MEANS, REPLICATES, AND CONTRASTS",/,/) 1ØØ ACCEPT 101, N, NR, NC 1Ø1 FORMAT (1, 1, 1) RN=NR DO 1 1=1, N READ 1, 102, DATA(1) 1 CONTINUE 1Ø2 FORMAT (/, E, E, E) READ 1, 102, RES DO 2 I=1., NC SS=Ø.Ø SP=Ø.Ø DO 3 J=1, N READ 2, 102, V(J) SS=SS+DATA(J)\*V(J) SP=SP+V(J)\*V(J)3 CONTINUE SS=RN\*SS EF=SS/(RN\*SP) SS=(SS\*SS)/(RN\*SP) FR=SS/RES TYPE 102, EF, SS, FR 2 CONTINUE END

