PC FLUX GENERATION

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July 19, 1990

I. PURPOSE

The following document was written to explain the process of generating fluxes on the PC/AT for IMP-8 and ISEE-3. It is intended to be used as a guidance tool for the PC flux generation procedure. Other sources of documentation have been cited and should be referenced.

II. OVERVIEW

The PCFLUX program is used to generate flux verses on the PC. These flux verses are generated in a file and used as input to the DIRECT program. The DIRECT program creates a time directory file and is used as input to the 2D program. The 2D program produces the fluxes and generates the plots.

The PCFLUX program requires four input files. These files consist of the PHA (pulse height analysis) data base, the experiment response table, the response table directory file and the user request file. The procedure for generating the PHA data base and the response tables is different for ISEE-3 and IMP-8. These procedures are documented separately.

The steps involved in the overall process requires setup and execution of programs on the MicroVAX, IBM 3081 and the IBM PC/AT computers.

III. ISEE-3 PHA and RESPONSE Data Bases

A. INTRODUCTION

The ISEE-3 PHA and RESPONSE data bases for the PC are created on the IBM 3081 computer. The data is extracted from the IBM data bases and reformatted for the PC. These files are written onto magnetic tape and then transferred to an optical disk with the DT program on the PC. Refer to flowchart #1 for graphical representation of program flow.

B. ISEE-3 RESPONSE Data Base

The RESPONSE program in 'XRHHL.RESPONSE.CNTL', reformats the existing ISEE-3 tables in the specified PC format. The data base is written onto magnetic tape and then transferred to an optical disk with the DT program. Refer to the "ISEE-3 PC-Formatted Response Table Generation System" for setup and execution.

C. ISEE-3 PHA Data Base

The ISEE-3 PHA data is generated on the IBM 3081 from the ENCY data base. The PCPHA program is in the dataset 'SB#IC.PCPHA.FORT'. The PCPHA program setup and execution is available in the "ISEE PCPHA Program Documentation and User's Guide". The PHA data base is produced onto magnetic tapes and transferred to an optical disk on the PC.

IV. IMP-8 PHA and RESPONSE Data Bases

A. INTRODUCTION

The IMP-8 VLET PHA data base is created on the IBM 3081 computer and the response data base is produced on the MicroVAX and the PC/AT. The PHA data is extracted from the IBM data bases and reformatted for the PC. These files are written onto magnetic tape on the IBM and then transferred to an optical disk on the PC. The response data base is produced on the MicroVAX, and then transferred to the PC and converted to defined formats.

B. IMP-8 RESPONSE Data Base

The IMP-8 response program, FTEST7.C, resides on the PC. The FTEST7.C program processes the data file that was originally transferred from the MicroVax, and creates an ASCII file. The ASCII file is manually changed and then used as input to the program, FINAL.C, on the PC. The FINAL.C program reformats the ASCII file into the PC-formatted data file. The response data base format is described in the "ISEE PCFLUX Program Documentation and User's Guide".

C. IMP-8 VLET PHA Data Base

The IMP-8 VLET PHA data base is generated on the IBM 3081 computer from the CNTS data base. The PCPHA program is in the dataset 'XRHHL.YR90.PCPHA.SOURCE'. The PHA data format is decribed in the "ISEE PCPHA Program Documentation and User's Guide". The

documentation on the IMP-8 VLET PHA data base is not available at this time.

V. DIRECTORY Program

The DIRTAB.C program is used to create a summary reference file from the response tables. This file contains the necessary byte offset and channel range information needed for access to a particle's response table records. The DIRTAB program is executed on the PC. The documentation on the file formats and execution of the program is available in the "ISEE PCFLUX Program Documentation and User's Guide".

VI. PCFLUX Program

The PCFLUX program produces an output file of flux verses on the PC. These verses follow the specifications defined in the "Low-Energy Cosmic-Ray Group PC Data Base" documentation written by Dr. Don Reames. The flux verses contain the rate count, live time and the number of pulse heights that were counted for the specified energy range and particle type.

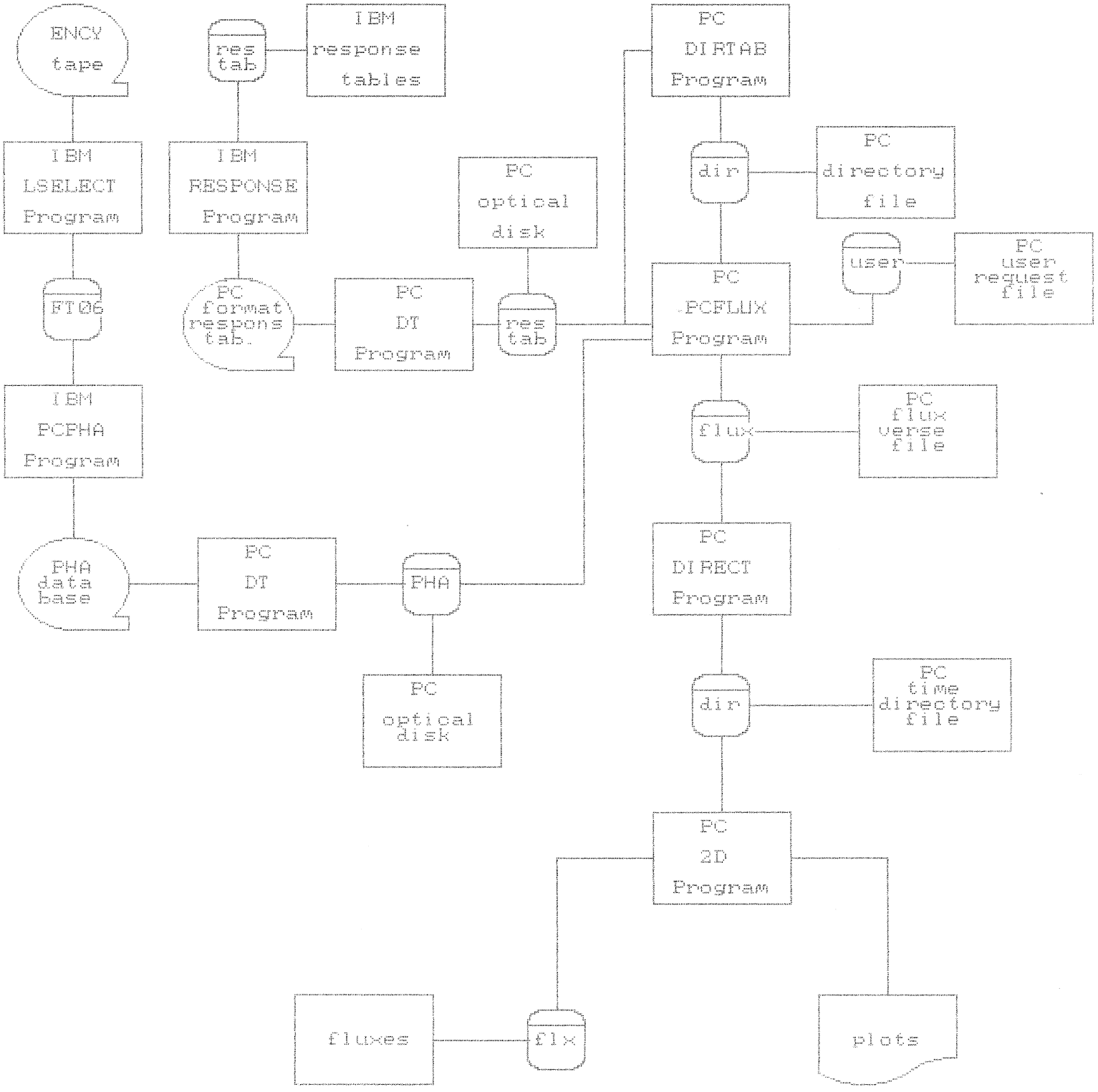
VII. DIRECT Program

The DIRECT program reads the flux verse file and creates a time-ordered directory file. The directory file is used as input to the 2D program. The DIRECT program is executed on the PC.

VIII. 2D Program

The 2D program produces the fluxes and generates the plots on the PC. The time-ordered directory file, created by the DIRECT program, is used as input to the 2D program, written by Dr. Don Reames. The 2D program reads the flux verses and calculates the actual fluxes and plots the results.

FLOWCHART	System: IBM and PC	Chart No.: 1	Page No.: 1
	Procedure: ISEE-3 PCFLUX	Author: K. Wortman	Effective Date: 6-27-90



FLOWCHART	System: MicroVAX, IBM and PC	Chart No.: 2	Page No.: 1 of 1
	Procedure: IMP-8 PCFLUX	Author: K. Wortman	Effective Date: 7-17-90