

in file

LEP-70/26

13.12..977

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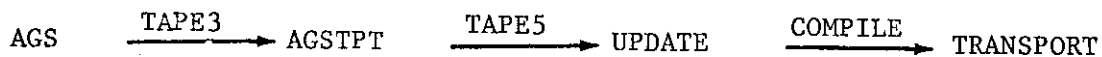
SCAN-0006133

An AGS to TRANSPORT translator

M. Hanney and E. Keil

1. Introduction

A program AGSTPT has been written which translates AGS output obtained by the TA option in Version 2 into input for TRANSPORT 1). AGSTPT generates most of the input data, but not all. Therefore the output is written in the form of a *DECK for UPDATE. The sequence of programs and files is :



The program card is :

```

PROGRAM AGSTPT (INPUT, OUTPUT, TAPE3, TAPE5, TAPE4 = INPUT,
                TAPE2 = OUTPUT)

```

2. Element types

Element types are generated according to the first character of their name in the AGS output. The following types are recognised :

Type no. Vary code	Type	Name
2.0	Rotation	none
3.0	Straight section	blank
4.0V	Bending magnet	B
5.0V	Quadrupole	Q
18.0V	Sextupole	S

Rotation matrices are automatically generated before and after all bending magnets if the straight magnet flag in AGS is set.

1) K.L. Brown, D.C. Carey, Ch. Iselin and F. Rothacker, CERN 73-16.

3. Vary codes

Vary codes (V)* for elements with given names may be defined, by supplying a list of pairs of (name, vary code). Which parameter of an element may be varied is shown in the table above. All elements with the same name have the same vary code. Vary codes may be defined for up to 200 elements. Elements not appearing in the list have vary code 0.

4. Input for AGSTPT

4.1 Binary output from AGS Version 2 on TAPE3 (TAPE3 rewound by AGSTPT).

4.2 BCD data as follows :

no. of cards	Variable	Purpose	Format	Ref. 1
1	Deckname	For UPDATE data file	A7	p. 10
1	Title		7A10	p. 10
1	Indicator		I5	p. 10
variable	Pairs of (name, vary)		8(1X,A4, 4X,A1)	p. 63, 66
	name is the name of the element(s) to be varied, vary is the vary code. There are 8 pairs of (name, vary) per card. Up to 200 pairs are allowed. The list is terminated by a blank name, therefore add a blank card if the previous one is full.			
1	X, θ , y, ϕ , λ , δ , $p\theta$		7F10.5	p. 31
1	A	Half aperture	F10.5	p. 31

The quantities on the last 2 cards are in TRANSPORT units (cf. p. 31).

Examples of the BCD data for AGSTPT and of the output from AGSTPT are shown in the attached figures.

* See pages 63 + 66 ref. 1)

5. Control cards for running AGSTPT

abcde.

ACCOUNT (name, division, accno)

ATTACH,LIB,7600LIBRARY,ID=PROGLIB.

LIBRARY,LIB.

FIND,TAPE3..... (result from AGS)

FIND,OLDPL,AGSTOTRANSPORT,ID=IS490HANN.

UPDATE(F)

FTN(A,T,I=COMPILE)

LGO.

REWIND,TAPE5.

UPDATE,I=TAPE5,F,D,N.L=F.

CATALOG,NEWPL,LEP70V5.....

end-of-section

.... Updates if any for AGSTOTRANSPORT ...

end-of-section

... data for AGSTPT

end-of-section

end-of-information

6. Control cards for running TRANSPORT

abcde.

ACCOUNT (name, division, accno)

ATTACH,LIB,7600LIBRARY,ID=PROGLIB.

LIBRARY,LIB.

FIND,OLDPL,LEP70V5.... (Catalogued during AGSTPT run)

UPDATE,D,F,L=123.

FIND,T,TRANSPORTBIN,ID=SP084FCI.

T,COMPILE.

end-of-section

... Updates for data file LEP70V5 if any...

end-of-information

Example of UPDATE file produced by AGSTPT

CK LEP70V5
MATCHING QUADRUPOLES

	13.0	19.0	;	†						
	0									
	1.000000									
QFH	5.0A0				0.0300	0.1039	0.0325	1.2570	0.1230	70.0000
	18.000				1.00000	2.11634		5.00000		
SF	18.000				0.50000	0.00000		5.00000		
	18.000				0.50000					
	18.000				0.50000					
B	4.0000				24.50000	1.03961		0.00000		
	18.000				0.50000					
QD	0.080				2.00000	-2.15068		5.00000		
	18.000				0.50000					
SD1	18.000				0.50000	0.00000		5.00000		
	18.000				0.50000					
	18.000				0.50000					
B	4.0000				24.50000	1.03961		0.00000		
	18.000				0.50000					
QFH	5.0A0				1.00000	2.11634		5.00000		
QFH	5.0A0				1.00000	2.11634		5.00000		
	18.000				0.50000					
SF1	18.000				0.50000	0.00000		5.00000		
	18.000				0.50000					
	18.000				0.50000					
B	4.0000				24.50000	1.03961		0.00000		
	18.000				0.50000					
QD	0.080				2.00000	-2.15068		5.00000		
	18.000				0.50000					
SD2	18.000				0.50000	0.00000		5.00000		
	18.000				0.50000					
	18.000				0.50000					
B	4.0000				24.50000	1.03961		0.00000		
	18.000				0.50000					
QFH	5.0A0				1.00000	2.11634		5.00000		
QFH	5.0A0				1.00000	2.11634		5.00000		
	18.000				0.50000					
SF2	18.000				0.50000	0.00000		5.00000		
	18.000				0.50000					
	18.000				0.50000					
B	4.0000				24.50000	1.03961		0.00000		
	18.000				0.50000					
QD	0.080				2.00000	-2.15068		5.00000		
	18.000				0.50000					
SD	18.000				0.50000	0.00000		5.00000		
	18.000				0.50000					
	18.000				0.50000					
B	4.0000				24.50000	1.03961		0.00000		
	18.000				0.50000					
QFH	5.0A0				1.00000	2.11634		5.00000		
QFH	5.0A0				1.00000	2.11634		5.00000		
	18.000				0.50000					
SF	18.000				0.50000	0.00000		5.00000		
	18.000				0.50000					
	18.000				0.50000					
B	4.0000				24.50000	1.03961		0.00000		
	18.000				0.50000					
QD	0.080				2.00000	-2.15068		5.00000		
	18.000				0.50000					
SD1	18.000				0.50000	0.00000		5.00000		
	18.000				0.50000					
	18.000				0.50000					
B	4.0000				24.50000	1.03961		0.00000		
	18.000				0.50000					
QFH	5.0A0				1.00000	2.11634		5.00000		
SENTINEL										

LEP70V5	1
LEP70V5	2
LEP70V5	3
LEP70V5	4
LEP70V5	5
LEP70V5	6
LEP70V5	7
LEP70V5	8
LEP70V5	9
LEP70V5	10
LEP70V5	11
LEP70V5	12
LEP70V5	13
LEP70V5	14
LEP70V5	15
LEP70V5	16
LEP70V5	17
LEP70V5	18
LEP70V5	19
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LEP70V5	71
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LEP70V5	73
LEP70V5	74
LEP70V5	75

† this card permits one to reduce the quantity of output as the transfer and beam matrices only occupy a single line.

reserves the possibility to do second order calculations in a subsequent run.

