

Memo CP-D/263

17 January 1996

To: Distribution

From: O. Schwerer *O. Schwerer*

Subject: New type of partial cross section?
(Differential cs integrated over part of angular range)

Reference: Subentries O0096.018 and O0149.002-21 in TRANS O003

In these subentries, a cross section (SF6=SIG, units=mb or microbarn) is given with an angular range (e.g. 25-150 degrees) which was originally given in the COMMON section. The angle information was moved by NDS to free text because, according to current rules angles in DATA or COMMON go only together with DA or COR in REACTION SF6 but not with SIG.

If these data are considered to be an approximation of the integral cross section, the angles should remain in free text because they are part of the description of the experimental method rather than an independent variable.

./..

Distribution:

C.L. Dunford, NNDC
N. Tubbs, NEA-DB
V.N. Manokhin, CJD
F.E. Chukreev, CAJaD
V. Varlamov, CDFE
Zhang Jingshang, IAE-CNDC
Y. Kikuchi, JAERI
Y. Tendow, RIKEN
K. Kato, JCPRG
F. Tárkányi, ATOMKI
V. McLane, NNDC

NDS: R. Arcilla
M. Lammer
H.D. Lemmel
P. Obložinský
A. Pashchenko
O. Schwerer
H. Wienke
3 copies

If, on the other hand, these data should be considered as significantly smaller than the integral cross section, then they represent a new type of partial cross section: a differential cs integrated over part of the angular range.

CAJaD is asked to check whether in the subentries concerned, the quantity compiled is a partial cs rather than the integral cs.

If a new partial cs type is needed, the most consistent solution would probably be a new modifier in SF8, e.g.

,DA,,PAI (Diff. cs integrated over partial angular range)
from ANG-MIN to ANG-MAX

This would have the dimension barn, like the existing quantity ,DA,,4PI (which however is measured at only 1 angle and then multiplied by 4π).

Because of the dimension barn one could think, alternatively, of introducing a new code in SF5 instead, to be combined with SIG (in analogy to partial cs with respect to the outgoing particle energy), e.g. PAI,SIG. This would however have the disadvantage of combining SIG in SF6 with ANGles in COMMON or DATA which at present is illegal and an important item for the checking codes.