**Nuclear Data Section**

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**Memo CP-D/1007**

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**To:** Distribution

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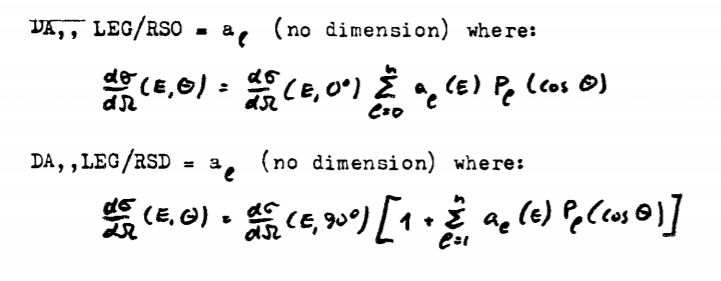
**Subject: LEXFOR “Fitting Coefficients” – LEG/RS0 and LEG/RSD**

LEXFOR “Fitting Coefficients” defines DA,,LEG/RS0 and DA,,LEG/RSD as follows:

DA,,LEG/RS0 = Bl (units NO-DIM) where:

DA,,LEG/RSD = Bl (units NO-DIM) where:

Due to absence of the *l*=0 term, the integration of the right-hand side over the whole solid angle gives zero. This is strange! I found they were defined differently in an old LEXFOR entry (IAEA-NDS-3 Rev.96/11):



For DA,,LEG/RSD, however, I do not see a reason to fix the 0th order term to 1 (*i.e.*, the angular integrated cross section is not necessary to be 4π times the 90 deg angular differential cross section in general.). I propose the following definitions:

DA,,LEG/RS0 = *al* (units NO-DIM) where:

DA,,LEG/RSD = *al* (units NO-DIM) where:

There are many data sets compiled with one of these quantities without the 0th order coefficient, and they are suspicious. I checked such questionable entries and found that LEG/RS0 or LEG/RSD are often wrongly used for the coefficients for the expansion *W*(*θ*)=1+*a*1*P*1+*a*2*P*2+…which must be coded with LEG/**RS**. Below is a summary from my quick review, and the originating centre is asked to check each case against the source article before correction and retransmission.

SF8 must be LEG/RS.

41027.003, 41136.003, 41140.004, 41615.004, 41660.002+004, 41684.002-003, 41685.005+006, A1156.008+009, A1358.004, C1361.004, C1499.0004-005, F0216.004, F0360.005, F0397.003+005, F0475.002, M0283.013-022, O1347.004.

SF8 must be probably LEG/RS (though the expansion formula is not given in the article or wrong).

40354.003, A1357.004, M0879.003-004

SF8 must be RSD.

41616.008-011

SF8 must be COS/RS.

F0013.004

Not clear

23411.002-003, 30455.003, 40449.002, O1195.004

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