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Memo CP-D/371

Date: 13 October 2003
To: Distribution
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Subject: Order of SF1, SF2 in REACTION code

Reference: CP-C/327, CP-A/147

There seems to be a difference of opinion on the coding of REACTION SF1 and SF2 in cases where the projectile is heavier than the target.

I agree with the argument that it does make sense to conserve the information about the actual target/projectile constellation within the REACTION code. On the other hand, identical data should be retrievable in one go.

As an alternative (or compromise) I suggest the following:

1. By default, the actual target / projectile must always be coded in the REACTION.
2. If the projectile is heavier than the target, and reversing SF1 and SF2 does not change the numerical data given in the particular subentry (e.g. cross section measured in CM system), then - and only then - the second "spelling" of the reaction will be given using the "tautology" formalism:

$((A(B,C)D,,SIG)=(B(A,C)D,,SIG))$ with B being heavier than A.

Therefore:

The REACTION describing the actual experimental constellation is coded first.
If the target is anyway heavier than the projectile, no tautology should be given.

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