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Memo CP-E/*050*

Date: August 20, 2004
To: Distribution
From: OTSUKA Naohiko
Subject: Astrophysical S-factor

Concerning V. McLane's proposal (CP-C/346), I am revising E1748, and also planning to add astrophysical S-factor into this entry. In our dictionary we find two S-factors ",SGV,,SFC" (S-factor for reaction rate) and ",SIG,,SFC" (S-factor for cross section). What is the difference between these two codes?

- Chapter "Astrophysical S-factor" of LEXFOR gives ",SIG,,SFN" for astrophysical S-factor (SFN in LEXFOR is typographic error, should be SFC). Definition is given by two well-known formulae.

- Chapter "Thermonuclear Reaction Rate" of LEXFOR gives ",SGV,,SFC" for thermonuclear S-factor. The definition is given by text, but formula is not found in LEXFOR nor in Refs [3], [4] and [5] ([1] and [2] is not available in my laboratory). Dimension is B*V in LEXFOR, but B*E in dictionary 36.

   We find entries of ",SGV,SFC" in A0093.004, A0126.004, A0627.002, A0632.002-004, C0431.002, F0481.004 and F0555.002. However I cannot understand why ",SGV,,SFC" (not ",SIG,,SFC") is used for these entries. B*E is applied to these entries.

   SFC is now defined in dictionaries 32 and 34. We can probably delete SFC from dict. 32.

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