

Japan Charged-Particle Nuclear Reaction Data Group

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Memo CP-E/037

Date: April 7, 2004
To: Distribution
From: OTSUKA Naohiko and KATŌ Kiyoshi
Subject: Differential cross sections for excitation energy of residual nuclei

Now we are compiling one paper (Y.Satou *et al.*, Phys. Lett. **B521**(2001)153), in which double differential cross sections with respect to the angle of emitted particle and the excitation energy of residual nucleus are given for $^{12}\text{C}(d,d)^{12}\text{C}$ inelastic scattering. In another paper (S.Takeuchi *et al.*, Phys. Lett. **B515**(2001)255), differential cross sections with respect to the excitation energy of residual nucleus are given for $^1\text{H}(^{14}\text{Be}, ^{14}\text{B})n$ scattering. We propose the following two reaction codes:

Dictionary 36 (Quantities)

, DA/DE , D/RSD Double-differential cross section with respect to angle of deuteron and energy of residual nucleus
, DE , RSD Energy spectrum of residual nucleus

Note: So far RSD to refer excitation energy of residual nucleus is often omitted in compilations.

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Sample of coded entry (E1781.002):

SUBENT	E1781002	20040323				E178100200001
BIB	3	6				E178100200002
REACTION	(6-C-12(D,INL)6-C-12,,DA/DE,D/RSD)					E178100200003
EN-SEC	ANG is polar angle between beam and deuteron in laboratory system (E-EXC,6-C-12)					E178100200004
STATUS	(TABLE)Data sent by Y.Sato, corresponding figure is Fig.1(a), p155 in reference					E178100200007
ENDBIB	6	0				E178100200009
COMMON	2	3				E178100200010
ANG-MIN	ANG-MAX					E178100200011
ADEG	ADEG					E178100200012
2.5	7.5					E178100200013
ENDCOMMON	3	0				E178100200014
DATA	4	35				E178100200015
E-EXC	E-EXC-ERR	DATA	DATA-ERR			E178100200016
MEV	MEV	MB/SR/MEV	MB/SR/MEV			E178100200017
4.5	0.5	19.9175092	0.00952647			E178100200018
5.4	0.4	0.91986242	0.00915569			E178100200019
6.2	0.4	0.76676465	0.00835912			E178100200020

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Sample of coded entry (E1797.002):

SUBENT	E1797002	20040324				E179700200001
BIB	6	21				E179700200002
REACTION	(1-H-1(4-BE-14,N)5-B-14,,DE,RSD)					E179700200003
EN-SEC	(E-EXC,5-B-14)Excitation energy of 14B calculated by E(d) + 16.77 MeV where E(d) is decay energy defined in Eq. (1) of the reference. Threshold energy is 16.77 MeV for the 12Be + p + n channel.					E179700200004
MISC-COL	(MISC1)Decay energy E(d) defined in Eq.(1) of the reference					E179700200005
	(MISC2)Energy spectra which are not corrected by acceptance					E179700200006
SAMPLE	- Chemical-form of target is CH2. (CH2)n and C target are used, C target was used to subtract contributions of carbon nuclei in the (CH2)n target.					E179700200007
	- Target-thickness: 187 and 152 mg/cm2 for (CH2)n and C target, respectively.					E179700200008
ERR-ANALYS	(ERR-1)Uncertainties for corrected and uncorrected spectra due to neutron detection efficiency and the reaction losses of the charged particles in hodoscope.					E179700200009
STATUS	(TABLE)Data sent by S.Takeuchi, corresponding figure is Fig.2 (a) and (c), p258 in reference					E179700200010
ENDBIB	21	0				E179700200011
COMMON	1	3				E179700200012
ERR-1						E179700200013
PER-CENT	10.0					E179700200014
ENDCOMMON	3	0				E179700200015
DATA	6	19				E179700200016
E-EXC	MISC1	DATA	ERR-S	MISC2	MISC2-ERR	E179700200017
MEV	MEV	MB/MEV	MB/MEV	MB/MEV	MB/MEV	E179700200018
16.845	0.075	-0.442	0.442	-0.023	0.023	E179700200019
16.895	0.125	0.627	0.362	0.058	0.034	E179700200020
16.945	0.175	0.432	0.35	0.056	0.045	E179700200021

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