

Japan Charged-Particle Nuclear Reaction Data Group

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Memo CP-E/029

Date: December 10, 2003
To: Distribution
From: OTSUKA Naohiko and KATŌ Kiyoshi
Subject: Double differential cross section integrated over partial angular range

We are compiling a spectroscopic study of hypernucleus by the (π^+ , K^+) reaction (T. Hasegawa *et al.*, Phys. Rev. Lett. **74**(1995)224). In this work, authors give double differential cross sections with respect to emission angle of positive kaon and excitation energy of residual nucleus.

Similar quantity is also found in T. Teranishi *et al.*, Phys. Lett. **B4074**(1997)110, where double differential cross sections with respect to emission angle and excitation energy of ^{11}Be are measured for $^1\text{H}(^{11}\text{Li},n)^{11}\text{Be}$ reaction. We propose the following codes for both cases:

Dictionary 36 (Quantities)

, DA/DE , , IPA Double-differential cross section integrated partial angular range)
, DA/DE , RSD , IPA Double-differential cross section d2/dA(Resid.)dE(Resid.)

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Sample of coded entry (E1601.002):

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SUBENT      E1601001  20031211      E160100100001
BIB         10      38      E160100100002
...
EN-SEC      ANG-MIN is minimum polar angle between beam and      E160100100020
             positive kaon in laboratory system                  E160100100021
             ANG-MAX is maximum polar angle between beam and    E160100100022
             positive kaon in laboratory system                  E160100100023
ENDBIB      38      0      E160100100041
COMMON      3      3      E160100100042
ANG-MIN     ANG-MAX     MOM      E160100100043
ADEG        ADEG        GEV/C     E160100100044
  2.0       14.0       1.06      E160100100045
ENDCOMMON   3      0      E160100100046
ENDSUBENT   45      0      E160100199999
SUBENT      E1601002  20031211      E160100200001
BIB         5      5      E160100200002
REACTION    (6-C-12(PIP,X)1-KP-0,,DA/DE,,IPA)      E160100200003
PART-DET    (KP)      E160100200004
EN-SEC      E-EXC: Excitation energy of 12(Lambda)C      E160100200005
ANALYSIS    (INTAD)integrated from 2 to 14 deg      E160100200006
STATUS      (CURVE)Data scanned from Fig.2, p225 in reference E160100200007
ENDBIB      5      0      E160100200008
NOCOMMON    0      0      E160100200009
DATA        3      99      E160100200010
E-EXC      DATA      DATA-ERR      E160100200011
MEV         MU-B/MEV   MU-B/MEV      E160100200012
  -1.366E+01  1.110E-05      E160100200013
  -1.317E+01  8.896E-04      E160100200014
...
  3.527E+01  2.840E-01  2.322E-02      E160100200110
  3.570E+01  2.350E-01  2.064E-02      E160100200111
ENDDATA     101      0      E160100200112
ENDSUBENT   111      0      E160100299999
```

Sample of coded entry (E1670.002):

SUBENT	E1670002	20031211			E167000200001
BIB	8	31			E167000200002
REACTION	(1-H-1(3-LI-11,N)4-BE-11,,DA/DE,RSD,IPA/RAW)				E167000200003
	DATA: Uncorrected for detector acceptance				E167000200004
PART-DET	(P)				E167000200005
	(N)				E167000200006
	(3-LI-9)				E167000200007
EN-SEC	ANG-MIN is polar angle between beam and 11Be in laboratory system				E167000200008
	ANG-MAX is polar angle between beam and 11Be in laboratory system				E167000200009
	(E-EXC,4-BE-11)Excitation energy of 11Be. This energy is calculated by $E(d) + 20.14$ MeV where $E(d)$ is decay energy defined in p112 of the reference and 20.14 MeV is threshold energy for the $9\text{Li} + p + n$ channel [G.Audi, A.H.Wapstra, Nucl. Phys. A 595(1995)409].				E167000200012
MISC-COL	(MISC1)Decay energy $E(d)$ defined in p112 of the reference				E167000200019
	(MISC2)Detector acceptance. True energy spectrum can be obtained by dividing tabulated data by this acceptance.				E167000200021
SAMPLE	Chemical-form of target is CH ₂ . (CH ₂) _n and C target are used, C target was used to subtract the contributions of carbon nuclei in the (CH ₂) _n target. Target-thickness: 191 and 188 mg/cm ² for (CH ₂) _n and C target, respectively.				E167000200024
METHOD	(COINC)Detect 9Li, proton and neutron in coincidence.				E167000200029
ERR-ANALYS	(ERR-1)Mainly due to the uncertainty in neutron detection efficiency				E167000200030
STATUS	(TABLE)Data (Fig.2(a), p112 in reference) received by e-mail from T.Teranishi (2003.09.17)				E167000200032
ENDBIB	31	0			E167000200034
COMMON	3	3			E167000200035
ANG-MIN	ANG-MAX	ERR-1			E167000200036
ADEG	ADEG	PER-CENT			E167000200037
0.0	5.0	10.0			E167000200038
ENDCOMMON	3	0			E167000200039
DATA	5	100			E167000200040
E-EXC	MISC1	DATA	ERR-S	MISC2	E167000200041
MEV	MEV	MB/MEV	MB/MEV	NO-DIM	E167000200042
20.19	0.05	0.0	0.0	0.03	E167000200043
20.29	0.15	0.02	0.01	0.095	E167000200044
...					
29.99	9.85	0.03	0.02	0.071	E167000200141
30.09	9.95	0.02	0.02	0.069	E167000200142
ENDDATA	102	0			E167000200143
ENDSUBENT	142	0			E167000299999