

Japan Charged-Particle Nuclear Reaction Data Group

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Memo CP-E/074

Date: September 14, 2005
To: Distribution
From: OTSUKA Naohiko
Subject: Multiple reaction formalism

We are restricting quantities which may be coded using multiple reaction formalism to the following 5 cases (see LEXFOR “Multiple reaction formalism”):

1. Resonance parameters of the same isotope and target, determined in the same analysis
2. Multiple representations of the same data:
3. Partial cross sections of a sum reaction
 - a) Isomer data (branches, ratios, *etc.*) of the same reactions.
 - b) Compound nucleus and direct interaction parts for the same reactions.
 - c) High-energy fission and spallation parts for the same reactions.
 - d) Binary and ternary parts for fission measured.
 - e) Light and heavy fragment parts for a given fission yield.
4. Data measured simultaneously for the production of specific particles or nuclides
5. Data for the same reaction obtained by different types of analysis

with 3 basic constraints (See System Manual “Reaction specification”):

1. The incident projectile and the target nucleus are constant.
2. Quantities are functions of the same independent variables.
3. Quantities are integrally related to each other.

I propose addition of a new case “Components of a vector or tensor quantity” into above list.

There might be other additional categories of data to which multiple reaction formalism could be allowed. Centres may propose such categories in the NRDC meeting in October.

Distribution:

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Sample of coded entry (E1898.008)T. Wakasa *et al.*, Phys. Rev. C **69** (2004) 044602 Fig.2

SUBENT	E1898008	20050813				E189800800001
BIB	5	11				E189800800002
REACTION	1(1-H-2(P,X)0-NN-1,SS,POL/DA/DE,,D)					E189800800003
	2(1-H-2(P,X)0-NN-1,SL,POL/DA/DE,,D)					E189800800004
	3(1-H-2(P,X)0-NN-1,NN,POL/DA/DE,,D)					E189800800005
EN-SEC	ANG is polar angle between beam and neutron in					E189800800006
	laboratory system					E189800800007
	(E-DGD,N) Energy transfer from projectile to target					E189800800008
SAMPLE	Target-thickness: 662 mg/cm2 for CD2 and 682 mg/cm2					E189800800009
	for C					E189800800010
ERR-ANALYS	(ERR-S) Statistical uncertainty					E189800800011
STATUS	(TABLE) Data (Fig.2, p044602-4 in reference) received					E189800800012
	by e-mail from T.Wakasa (2004.05.24)					E189800800013
ENDBIB	11	0				E189800800014
COMMON	3	3				E189800800015
EN	E-RSL	ANG				E189800800016
MEV	MEV	ADEG				E189800800017
345.0	3.0	16.0				E189800800018
ENDCOMMON	3	0				E189800800019
DATA	7	17				E189800800020
E-DGD	DATA	1ERR-S	1DATA	2ERR-S	2DATA	3E189800800021
ERR-S	3					E189800800022
MEV	NO-DIM	NO-DIM	NO-DIM	NO-DIM	NO-DIM	E189800800023
NO-DIM						E189800800024
20.00	-0.5678	0.0198	0.0207	0.0216	0.0581	E189800800025
0.0221						E189800800026
25.00	-0.6348	0.0166	0.0379	0.0181	0.1009	E189800800027
0.0186						E189800800028
...						
167.50	-0.2183	0.1384	0.1677	0.1479	-0.2814	E189800800055
0.1222						E189800800056
187.50	-0.0478	0.1709	-0.0505	0.1829	-0.0302	E189800800057
0.1423						E189800800058
ENDDATA	38	0				E189800800059
ENDSUBENT	58	0				E189800899999