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Date: October 4, 2007
To: Distribution
From: OTSUKA Naohiko and Hans Henriksson
Subject: Plotting flags in Archive Dictionary 24 (Data headings)

Columns 50 to 56 of Archive dictionary 24 are used for plotting flags. These flags inform us the role of headings in plotting (independent variable or dependent variable? data point or error bar? etc.). The current rule of these 7 columns however does not cover minimum, maximum, approximate, uncertainty and resolution of *one of multiple variables* (E1, ANG1, etc). We would like to propose a revision of the rule.

Our current rule for these 7 columns is as follows (See more detail in the dictionary manual prepared by Schwerer in August, 2007.):

Distribution:

S. Babykina, CAJaD	A. Blokhin, CJD	J.H. Chang, KAERI	M. Chiba, JCPRG
S. Dunaeva, NDS	S. Ganesan, BARC	Z.G. Ge, CNDC	O. Gritzay, KINR
A. Hasegawa, NEA-DB	H. Henriksson, NEA-DB	M. Herman, NNDC	A. Kaltchenko, KINR ^q
J. Katakura, JAEA	K. Katō, JCPRG	Y.O. Lee, KAERI	S. Maev, CJD
V.N. Manokhin, CJD	V. McLane, NNDC	A. Mengoni NDS	M. Mikhaylyukova, CJD
A. Nichols, NDS	C. Nordborg, NEA-DB	P. Obložinský, NNDC	Y. Ohbayasi, JCPRG
A. Ohnishi, JCPRG	N. Otuka, JCPRG	V. Pronyaev, CJD	D. Rochman, NNDC
O. Schwerer, NDS	S. Tákacs, ATOMKI	S. Taova, VNIIEF	T. Tárkányi, ATOMKI
V. Varlamov, CDFE	M. Vlasov, KINR	M. Wirtz, NDS	H.W. Yu, CNDC
V. Zerkin, NDS	Y.X. Zhuang, CNDC	EXFOR, NEA-DB	

Column number			
Independent variable	Dependent variable		
50	53	1:value 2:minimum 3:maximum 4:approximate 5: <i>one of multiple variable</i>	9: uncertainty or resolution
51	54	1:numerator 2:denominator	1:+error 2:+resolution 3:+half resolution 4:+statistical error 5:+partial error
52	55		1:-error 2:-resolution 3:-half resolution 4:-statistical error 5:-partial error
56		1:CM	

However, it is impossible to express minimum, maximum, approximate, uncertainty and resolution of *one of multiple variables* (E1, ANG1, etc) in the current rule.

Example:

Column #	50	51	52	53	54	55	56
E	1						
E-MAX	3						
E-CM	1						1
E-ERR	9	1	1				
+E-ERR	9	1					
-E-ERR	9		1				
E-RSL	9	2	2				
DATA				1			
DATA-ERR				9	1	1	
ERR-S				9	4	4	
ERR-1				9	5	5	
E1	5						
E1-MAX	???						
E1-ERR	???						

The last two examples show that we cannot express uncertainty or resolution of “one of multiple variable” cannot express in the current rule.

Proposal

Option 1: Delete “one of multiple variables”

E1, E2, ANG1, ANG2,... is “one of multiple variable” in the current rule. However E, ANG,... can also be “one of multiple variable” (Example: E and ANG in double differential cross section). Therefore deletion of “one of multiple variables” is one option.

Column number			
Independent variable	Dependent variable		
50	53	1:value 2:minimum 3:maximum 4:approximate 5:one of multiple variables	9:uncertainty or resolution
51	54	1:numerator 2:denominator	1:+error 2:+resolution 3:+half resolution 4:+statistical error 5:+partial error
52	55		1:-error 2:-resolution 3:-half resolution 4:-statistical error 5:-partial error
56		1:CM	

Below is an example of plotting flags according the first option:

Column #	50	51	52	53	54	55	56
E	1						
E-MAX	3						
E-CM	1						1
E-ERR	9	1	1				
+E-ERR	9	1					
-E-ERR	9		1				
E-RSL	9	2	2				
DATA				1			
DATA-ERR				9	1	1	
ERR-S				9	4	4	
ERR-1				9	5	5	
E1	1						
E1-MAX	3						
E1-ERR	9	1	1				

Option 2: Keep “one of multiple variables” category

We never met “minimum error”, “maximum error” and “approximate error” etc. (e.g. ANG-ERR-MAX, ANG-RSL-MIN, ...). Therefore the following scheme covers all headings in dictionary 24 (One exception: E-NM-ERR cannot be expressed by this second option.).

Column number			
Independent variable	Dependent variable		
50	53	1:value 2:one of multiple variables	8: <i>uncertainty or resolution for value</i> 9: <i>uncertainty or resolution for one of multiple variables</i>
51	54	1:numerator 2:denominator	1:+error 2:+resolution 3:+half resolution 4:+statistical error 5:+partial error
52	55	1: <i>minimum</i> 2: <i>maximum</i> 3: <i>approximate</i>	1:-error 2:-resolution 3:-half resolution 4:-statistical error 5:-partial error
56		1:CM	

Below is an example of plotting flags according the second option:

Column #	50	51	52	53	54	55	56
E	1						
E-MAX	1		2				
E-CM	1						1
E-ERR	9	1	1				
+E-ERR	9	1					
-E-ERR	9		1				
E-RSL	9	2	2				
DATA				1			
DATA-ERR				9	1	1	
ERR-S				9	4	4	
ERR-1				9	5	5	
E1	2						
E1-MAX	2		2				
E1-ERR	8	1	1				