

MEMO CP-A/97

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To: **Distribution**

From: **F.E. Chukreev**

Subject: About Redundant information in **EXFOR**

Dr. O. Schwerer sends remarks very often regarding to redundant information in CAJAD compilations. But the redundant information is harmless and useful.

The redundant information is used for all modes of information transmitting. We could not understand oral speech without redundant information, because everybody has some peculiarities in his pronounce. The scetch of each letter contains the redundant information. Without the redundand information we could not understand different types and manuscripts. The redundant information is obligatory for digital transmitting in electronic nets.

The redundant information is needed for the best understanding of main information and to conserve the information from random damages or alterations.

Redundant information is used in EXFOR for many cases now. For example, when you write **REACTION** as:

Target(beam,product1)product2

Then subfield 3 or 4 is redundant, as if yo know target, beam and product2, you will not have any hardnesses to calculate product1. But we use the redundant information to check by checking codes and exclude a misprint.

Second example: When you write nuclei code as: **Z-SYM-A**, then **Z** and **SYM** is tautology.

Third example: If **DETECTOR** is (**LONGC**), then **PART-DET** is redundant information because long counter detects neutron only.

The importance of redundant information is not limited by problem of checking. The information helps to improve understanding of compilation by users. If you write:

Reaction (25-MN-55(P,N+P)25-MN-54,IND,SIG),

Then IND is redundant information, of course. But it is known, after a search of Mn-54 on chart of nuclides. The redundant information permits for user to exclude a work with additional sources of information. Mn-54 is simple example. Let us see:

REACTION M(82-PB-0(P,X)29-CU-68-M,,SIG).

G(82-PB-0(P,X)29-CU-68-G,CUM,SIG)

In the case, CU-68-G is daughter of NI-68, but CU-68-M can not be produced due to radioactive decay NI-68. Any serious user will check first line obligatory. To check he will be forced to take "Table of Isotopes" or special "Chart of nuclides". But if a compiler wrote **29-CU-68-M,IND**, then attentive studying of additional sources will not be needed.

Very many another examples could be added. The examples will include redundant information for experienced nuclear physicist.

Our activity on nuclear reactions compilation has aim to help for user, to save his time and trade. Redundant information helps to decide these problems. Until main users of EXFOR were experienced nuclear physicists, redundant information was not needed. Until data exchange used the cards, redundant information was harmful, because the information increased number of cards.

User community is increased now. The community includes scientists, which have not special education for nuclear physics. The quantity of transmitted information is not limited now.

May be, we have not need to struggle against redundant information?

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