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**Memo CP-D/399**

**Date:** 3 June 2004  
**To:** Distribution  
**From:** O. Schwerer

**Subject:** **Proposed codes for cross section for heavy/light fission fragment production**

**Reference:** **Memo CP-A/153**

In this memo the codes

, SIG, HF and  
, SIG, LF

are proposed for the formation of heavy or light fragments in the interaction of alphas (0.65 - 12.7 GeV) with Bi. (Todorovic et al., APP/B,34,4205,2003).

The definition of these quantities is not quite clear to me, since in such reactions more than 1 heavy fragment can occur, and in addition, heavy fragments are distinguished from "heavy residues".

In the draft entry O0172 for this work, subentries 2 and 3 are both coded with SIG,HF. The former refers to Figure 4 of the article ("Cross section for production of events with a single heavy fragment"), the latter to Figure 5 ("Cross section for the production of heavy residues"). This difference is not reflected in the proposed EXFOR coding.

Furthermore, the work has additional similar curves, e.g. giving cross sections in mb for "production of thermal fission events" and for "events in violent collisions" (Figure 8). (I am happy that these are not also proposed for compilation - but where is the borderline, and who defines it?)

I hesitate to include the proposed new quantities because

- the definitions are not clear
- the work has additional results which (though even more exotic) are probably - to those who use these data - as interesting as the quantities proposed for compilation

Although the lowest point in this work is below 1 GeV, it raises some typical questions related to "exotic" works (exotic to our "classical" users and many of our compilers):

- Where to draw the borderline what quantities to compile
- Who writes the necessary LEXFOR definitions for new data types? (E.g., I am not competent for high energy data)
- How many new quantities do we want to add to the dictionaries which are relevant only for high energy data? Should they have a special flag?
- What about works spanning an energy range from below 1 GeV up to high energies? (Assuming that the limit for compulsory compilation will be set to 1 GeV).

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