Memo CP-C/313

DATE: January 28, 2003
TO: Distribution
FROM: V. McLane
SUBJECT: Longitudinal Momentum

I had proposed in Memo CP-C/290 to use the code "LON,DA/DP,,IPA", where LON stood for longitudinal secondary linear momentum. N. Otuka of the JCPRDG points out that the definition of LON in Dictionary 31 is longitudinal spins, and would not apply here for momentum. He also questions whether this is a correct use of the branch field, and whether the use MOM-SEC is correct.

I can see that a problem might arise if a polarization quantity were given as a function of longitudinal momentum; this is a possibility in the future.

I make the following proposals.

1) Add the quantity LP to Dict. 31 for longitudinal momentum. (In future, TP can be added for transverse momentum, if required).

2) The longitudinal momentum is a component of the total linear momentum and, therefore, it can be argued that the use of SF5 is correct.

3) MOM-SEC is defined as secondary linear momentum, and its' use for the longitudinal component is correct.

Changes for Dictionary 36 (Quantities): replace LON with LP.
        LON,DA/DP,,IPA   LP,DA/DP,,IPA
        LON,DA/DP,P,IPA   LP,DA/DP,P,IPA

I will take care of correcting the entry already transmitted (C0820).

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