In a number of publications between 1981 and 1992, non-factual, misleading, and inconsistent information appeared, concerning HZE-particle dosimetry measurements with CR-39 track detectors on various missions of the Space Shuttle. Conclusions drawn from the comparisons of HZE-particle fluences measured at various locations on different spacecraft have no experimental justification, due to very large, concealed errors in the measured HZE-particle fluences. Inconsistencies in various publications regarding important details and results of these measurements are discussed in this paper. It is explained why fundamentally different results were published for several of the same measurements in different papers of the same research group, without any reference to their prior publications, or indication of correction. The actual error and reliability of these measurements are disclosed. A new method is presented, which allowed the first successful HZE-particle fluence and high-LET spectrum measurements in the dosimetry program of the Space Shuttle with plastic track detectors.
Our conclusion is that high-LET dosimetry data published for each Space Shuttle missions over a three-year time period should not be relied upon, since they have significant concealed errors and no sufficient scientific foundation.