Computation method of conventional directional channel data for CR detector with PC tubes. The conventional channel is introduced to provide counting-rate data which is comparable to scintillation-counter-type (SC-type) detectors (Nagoya, Hobart, SaoMartinho). It represents data of a "virtual" detector with a comparable solid angle with the SC-type detectors. In this virtual detector, each unit detector is (0.1 x N_PC) x (0.1 x N_PC) meter square, where N_PC is a number of PCs forming the conventional channel.

- The original counting-rate data, whose angular resolution is defined by the PC-tube size, is determine counts $N_{i,j}$, $(i,j = -11\sim11)$, in each of 23 x 23 directional channels for Kuwait, and $N_{i,j}$, $(i = -9\sim9, j = -11\sim11)$, in each of 19 x 23 directional channels for Syowa.

- Number of combinations of tubes that form of each conventional directional channel of 23 x 23 or 19 x 23 direction (= $W_{i,j}$, where $i = -11\sim11$ or $-9\sim9, j = -11\sim11$).

- Number of combinations of tubes that form of each conventional directional channel (= $W_{i,j}^{d}$, where $i = -11\sim11$ or $-9\sim9, j = -11\sim11, d = 1\sim13$).

- Calculate counts of conventional 13 directional channel $N^{d=1\sim13}$ as

$$N^{d} = \sum_{i}\sum_{j}\left(N_{i,j}\frac{W_{i,j}^{d}}{W_{i,j}}\right)$$

- Calculate error E^{d} as

$$E^{d} = \sqrt{\sum_{i}\sum_{j}\left(N_{i,j}\left(\frac{W_{i,j}^{d}}{W_{i,j}}\right)^{2}\right)}$$

CR muon detector with PC tubes can provide finer directional resolution than that with scintillators. However, 13 conventional direction channels are used for better statistics.