New Correction Method

Function approximation method using \( \text{ratei}(3) \) and TIS

Let’s take a relatively straightforward idea…

\[
F_{i=1\ldots3}(TIS) \cdot \text{RateI}(3) + A_0
\]

\[
F_i(TIS) \equiv A_{2i} \cdot TIS + A_{2i+1}
\]

\[
F_i \equiv \begin{cases} 
F_1 & TIS \leq 0.5 \\
F_2 & 0.5 < TIS \leq 2.0 \\
F_3 & 2.0 < TIS 
\end{cases}
\]

Parameter size:
7(parameters) \cdot 912(PMT) = 6384

\text{Cf. matrix : 570000}
**New Correction Method - Result**

Can New function describe the things well?

Let's do correction using new function, method and see how it works.

**Before**

![Graph showing data before correction.]

**Do correction!**

![Graph showing data after correction.]

**After**

![Graph showing data after correction.]

**NOTE:**

Peak is normalized ~ 1000.
Sample is rsmon data itself.
New Correction Method -result

Categorization of miss correction patterns.

Is there any other miss correction?
Any inclination to fail?

Eye scan ....
And categorize them.

1: fail at the spill end.
2: success to correct.
New Correction Method – result cont…

Let’s take a look at more global things…

The sigma/mean ratio over the up-stream PMTs

Before

After

NOTE: Mean is normalized to 1000.

rsmon.raw00.50007.hbook
New Correction Method – result cont...

Can we apply this function (and its parameters) to another run?

Rsmon.raw00.50007.hbook  Rsmon.raw00.50061.hbook
**Correction Power of Jim’s Matrix Method**

Can new function method have enough correction power compare to the Jim’s matrix method?

Do matrix based correction using the same data sets, and Compare!

There is a tendency to rectify them to the miss direction at the both edges of spill structure.
Comparison between New correction Method and Jim’s Matrix Method

New correction method has the almost same correction effect as Matrix method.