TDUNP bug and fix (D.Jaffe 20mar2003)

- Errors in TDUNP, ANAL_FLAGS and UPTDMOD affect the “calibrated” TD times.
- The error: In TDUNP, the TD time for the current hit, edgetdh, is corrected by rdtt0(end,layer,z) where z is the first sector of the 4 multiplexed counters that are input to a single TD.
- Result: Wrong t0 applied for 3 of 4 RD counters in a hextant in “calibrated” TD data.
- Following pages show the problem in terms of t(TD)-t(TDC) before and after the fix.
- The good news: RD TD t0 calibration is OK because it used “raw” TD data.
- The bad news: “calibrated” TD times for 3/4 RD counters in a hextant is wrong in current PASS1 output.
Old calibration, old code

Upper: \( t(TD) - t(TDC) \) vs RD module, with fitted mean superimposed
Lower: Fitted mean of \( t(TD) - t(TDC) \) vs RD module (note scale change)
Units are ns
Old calibration, old code

Distribution of fitted means of $t(TD)-t(TDC)$ vs multiplex channel

Units are ns

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Old calibration, new code

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Distribution of fitted means of $t(TD)-t(TDC)$ vs multiplex channel
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