

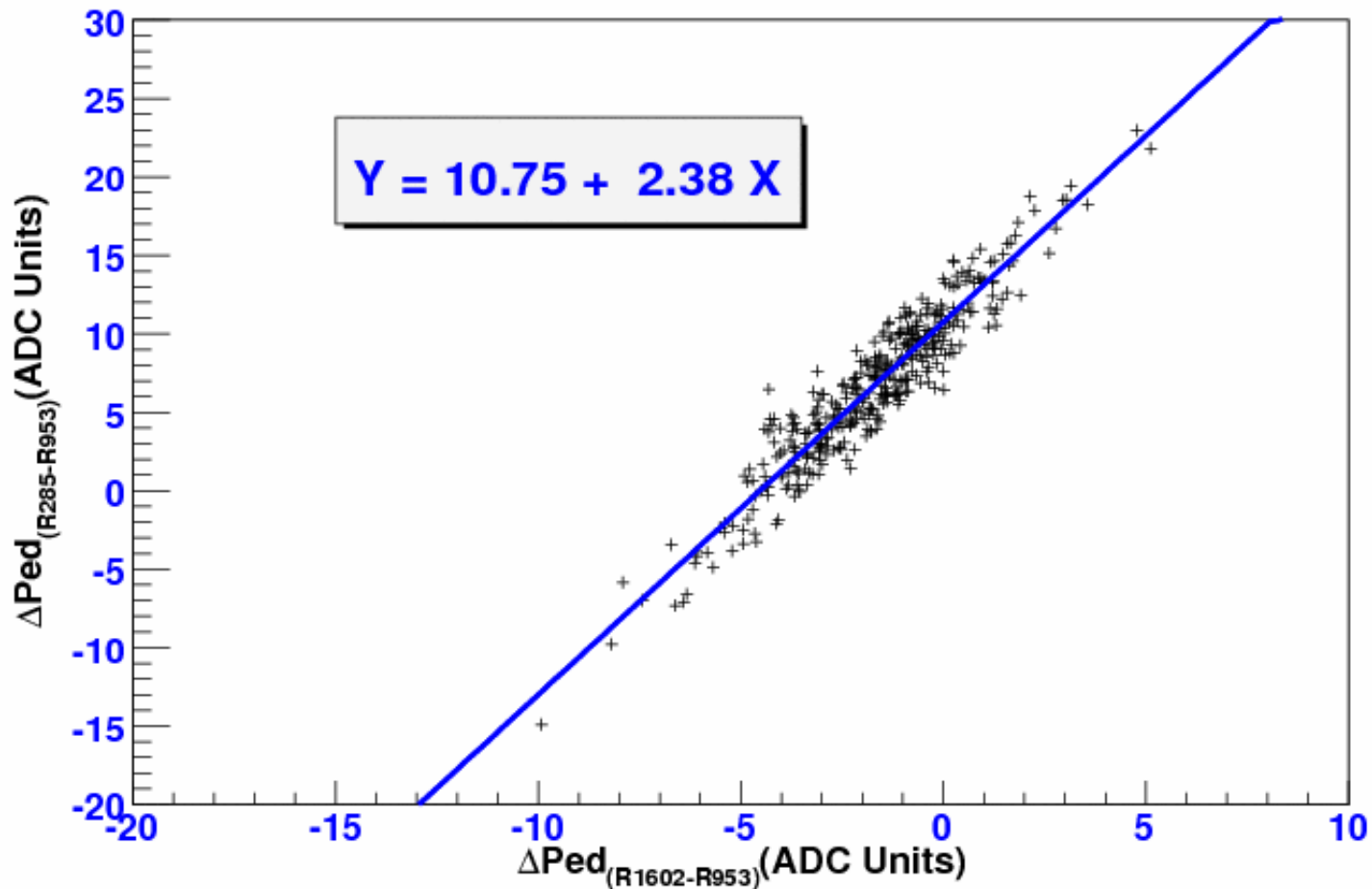
Temperature Estimation Using Pedestals

Aous Abdo, NRL

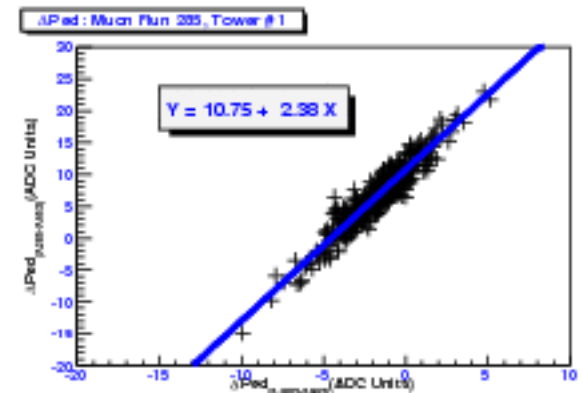
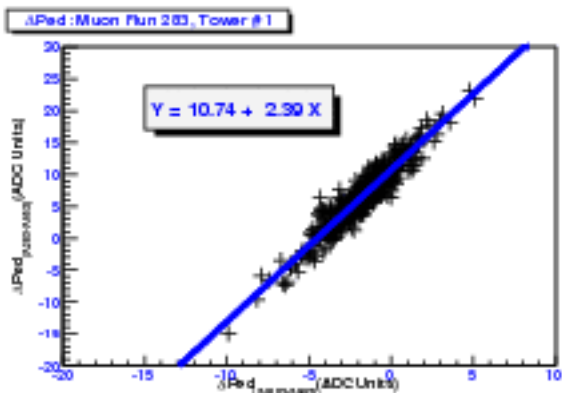
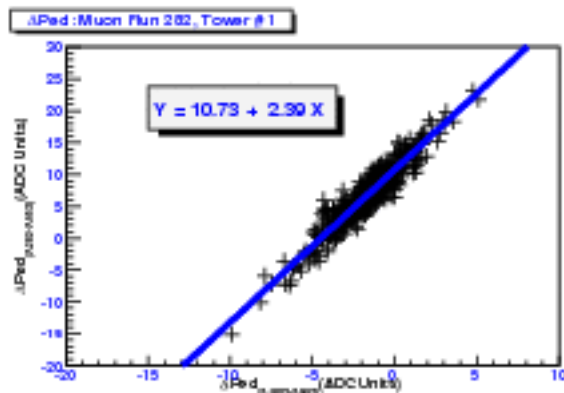
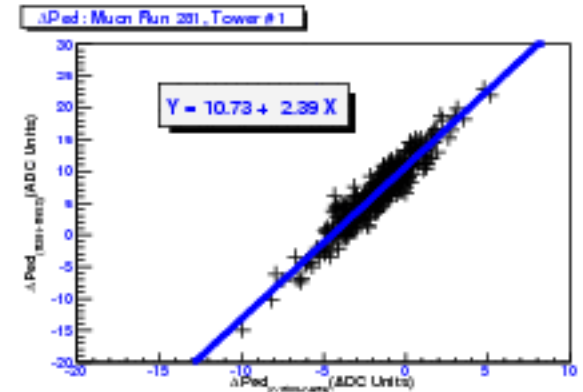
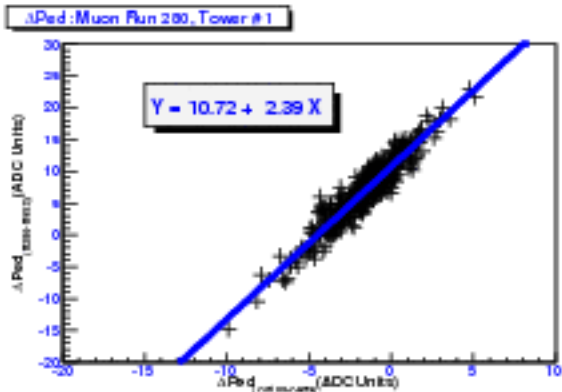
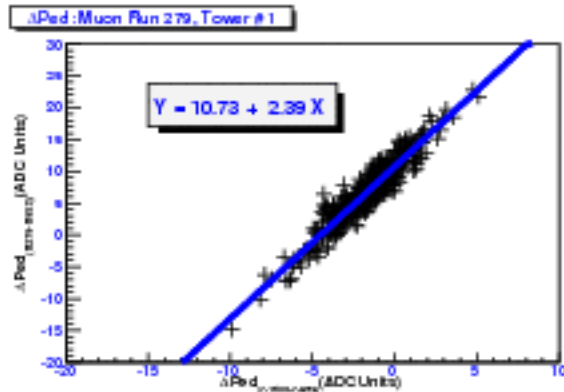
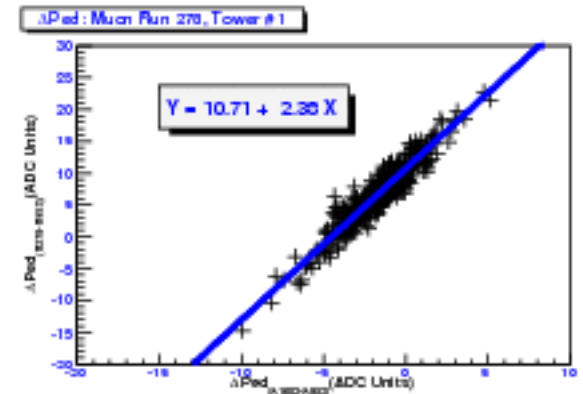
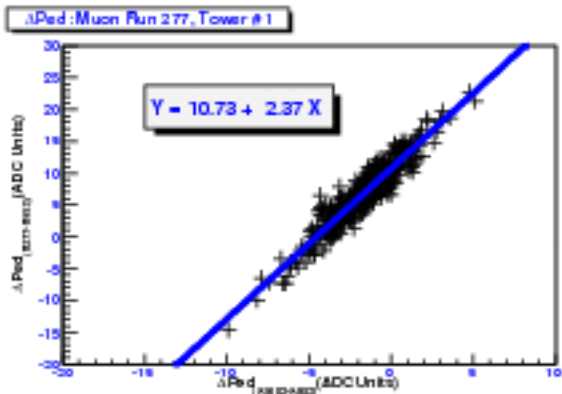
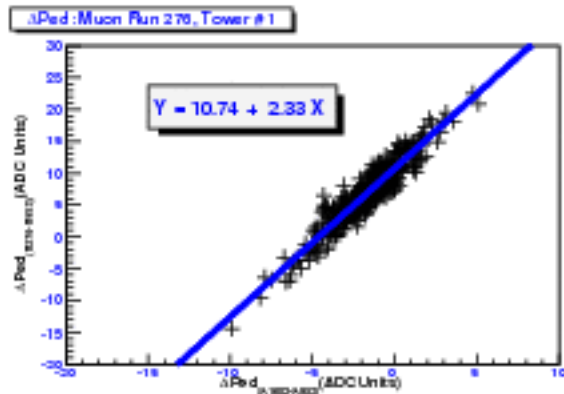
- ❖ Compare the difference in pedestal distributions for a Muon run to two runs with known Temperatures (953 and 1602).
- ❖ From the slope of the distribution we estimate the temperature according to:

$$T_i = T_{953} + \text{Slope} * |T_{1602} - T_{953}|$$

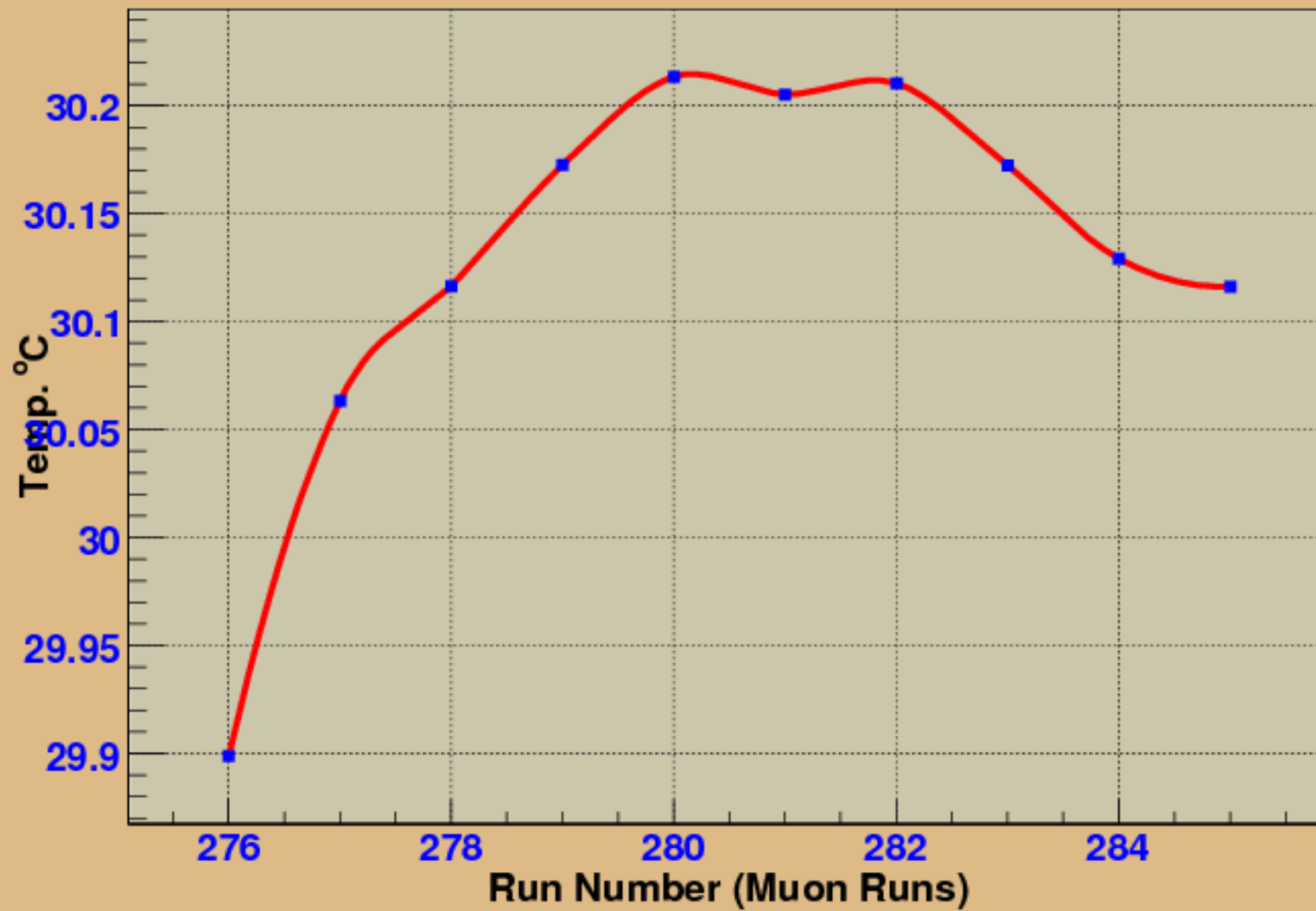
$\Delta\text{Ped}_{\text{Muon Run 285, Tower \# 1}}$



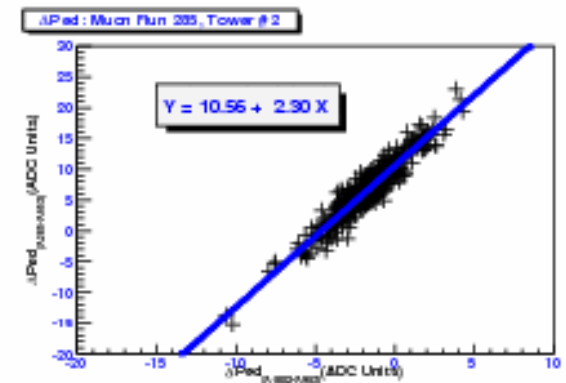
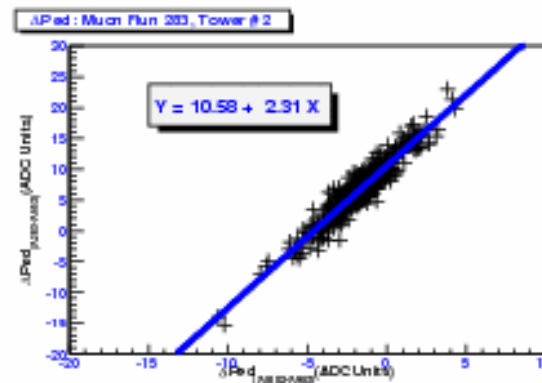
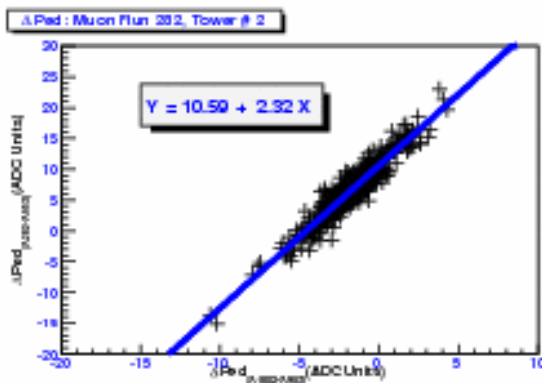
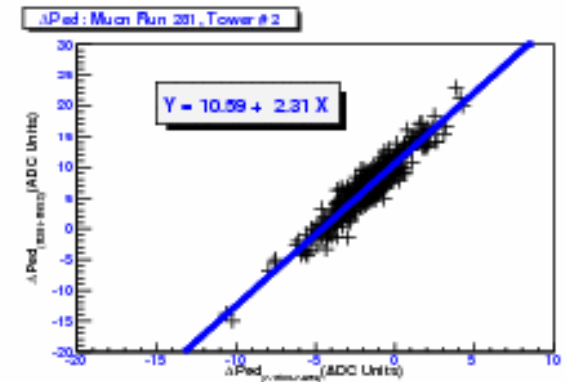
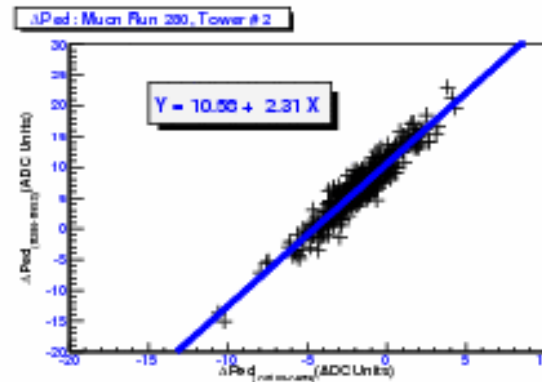
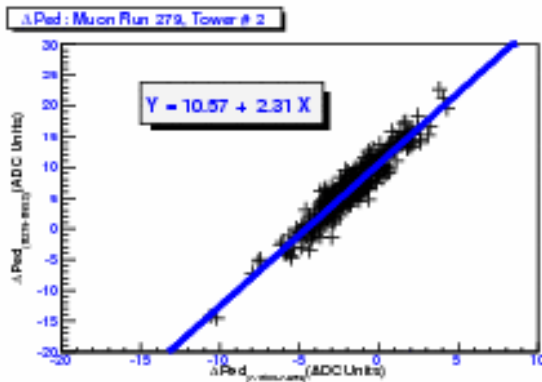
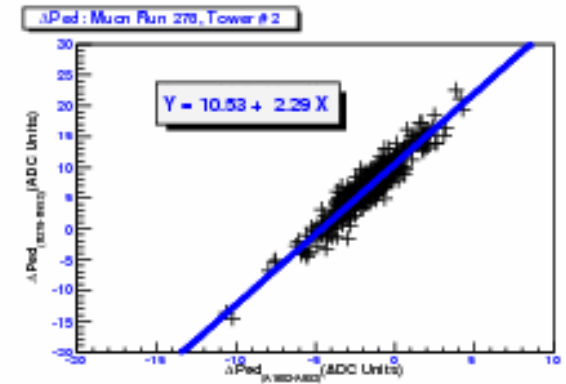
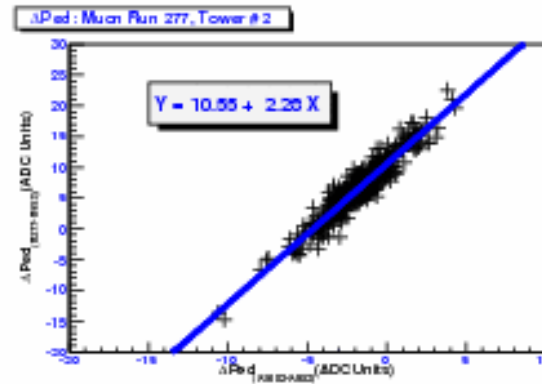
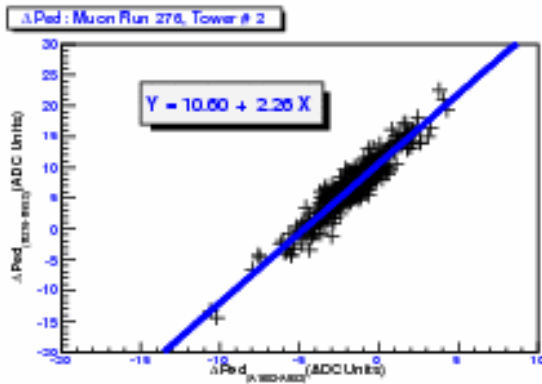
Do this for the 10 Muon runs we have (276-285) Distributions for Tower 1



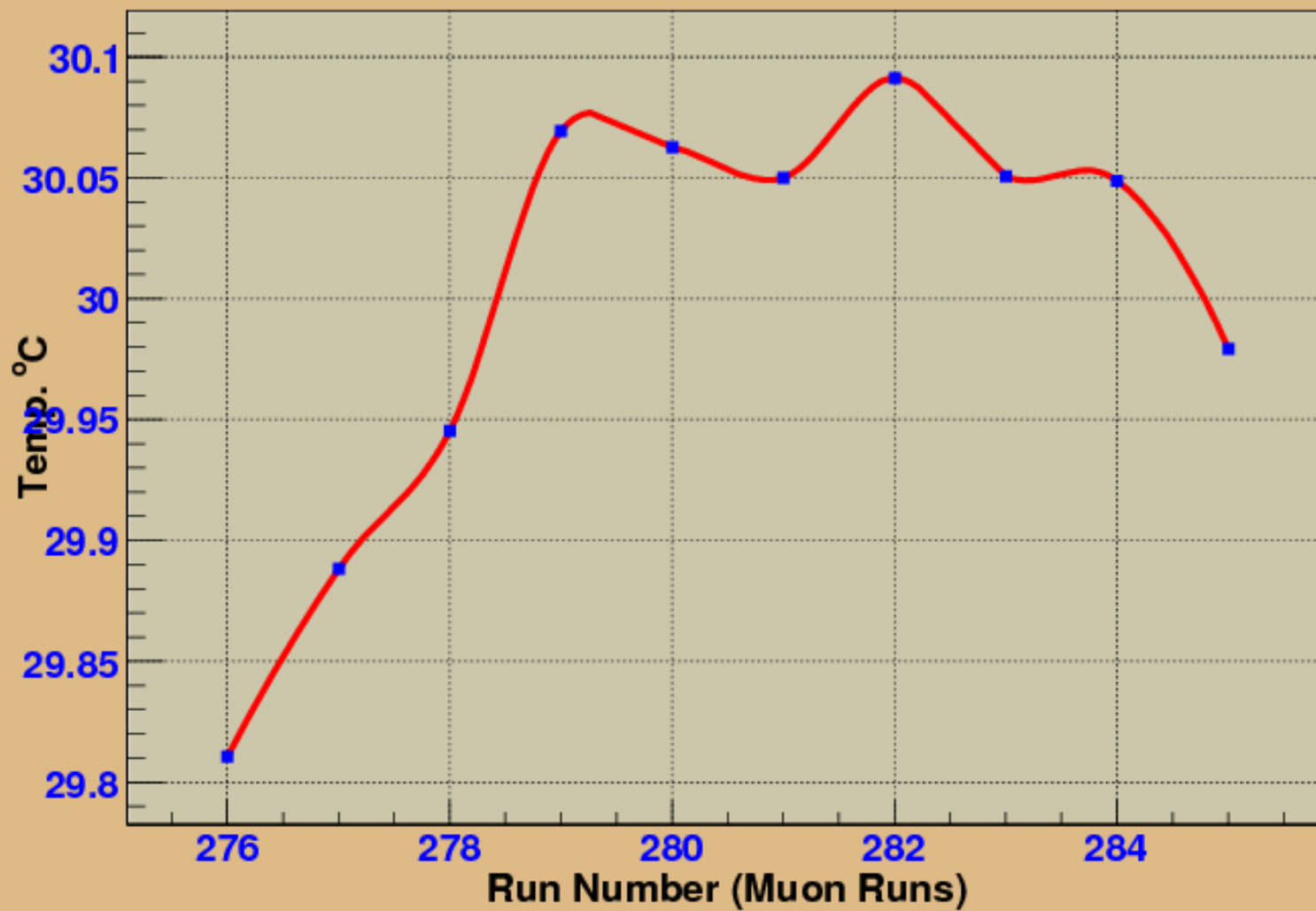
Temperature Measurements for Muon Runs, Tower # 1



Distributions for Tower 2



Temperature Measurements for Muon Runs, Tower # 2



Check the procedure on runs with know temperatures

Run Number	Temperature Est. Tower 1	Temperature Tower 1
1165	23.05	23.1
1191	21.7	21.8
1198	23.9	23.9
1569	23.9	24.1

Run Number	Temperature Est. Tower 2	Temperature Tower 2
1281	20.5	20.4
1348	21.98	21.8