

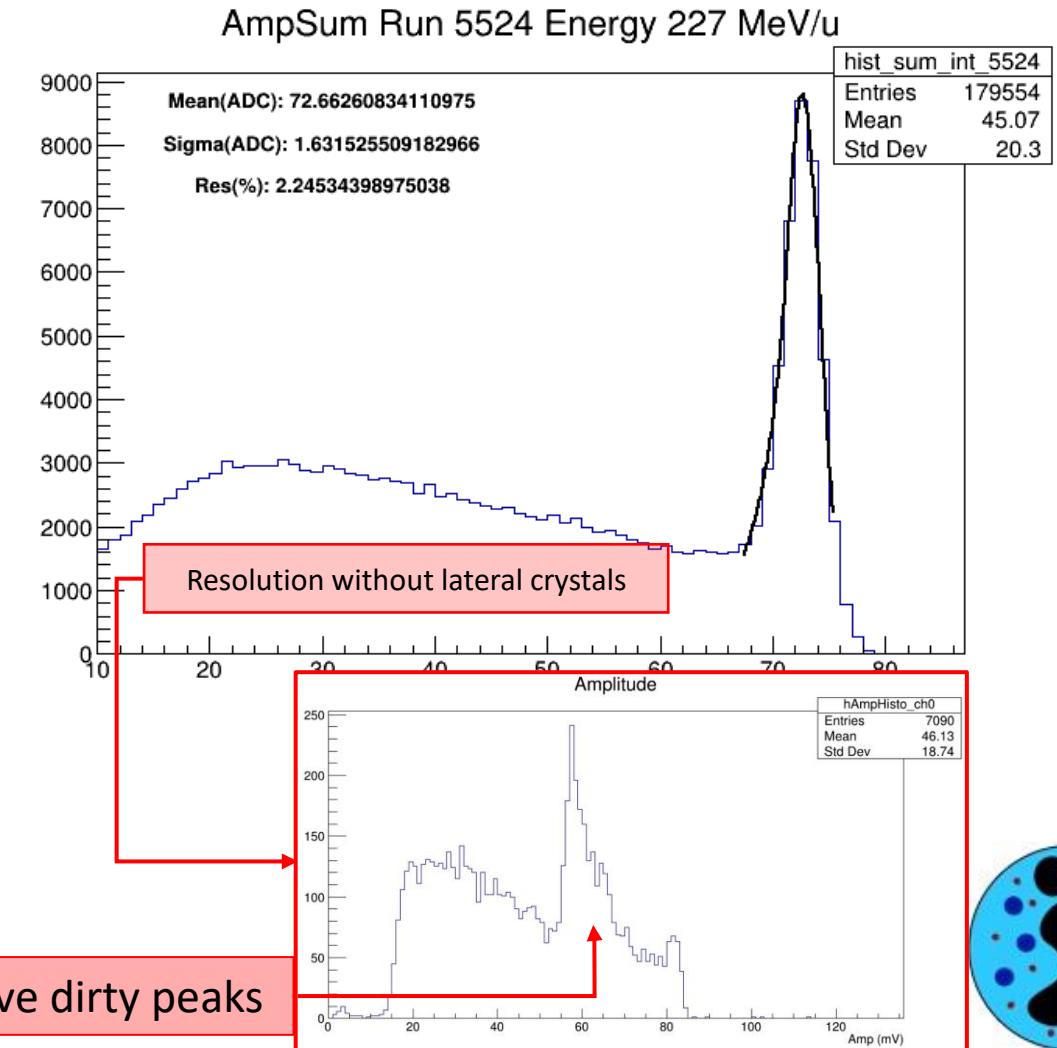
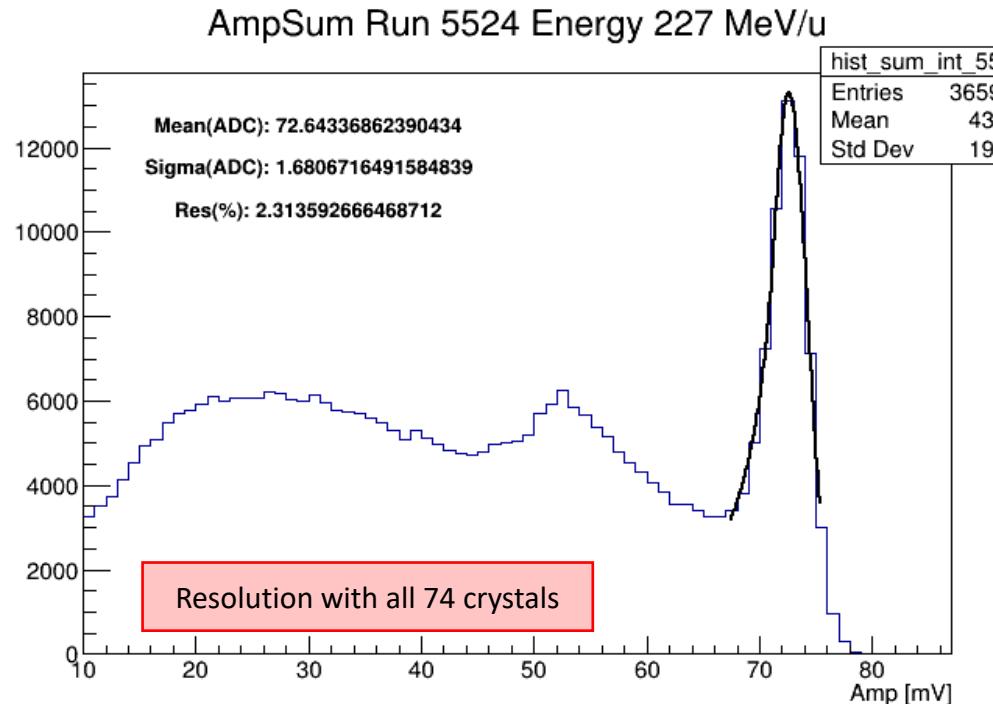
Calorimeter updates: Screensaver Analysis @CNAO2022

A. Valetti



Proton 227 MeV/u Integral resolution with $p_0_{23}/p_0_{\text{cry}}$ method

How P0 shift calibration method behave with proton?



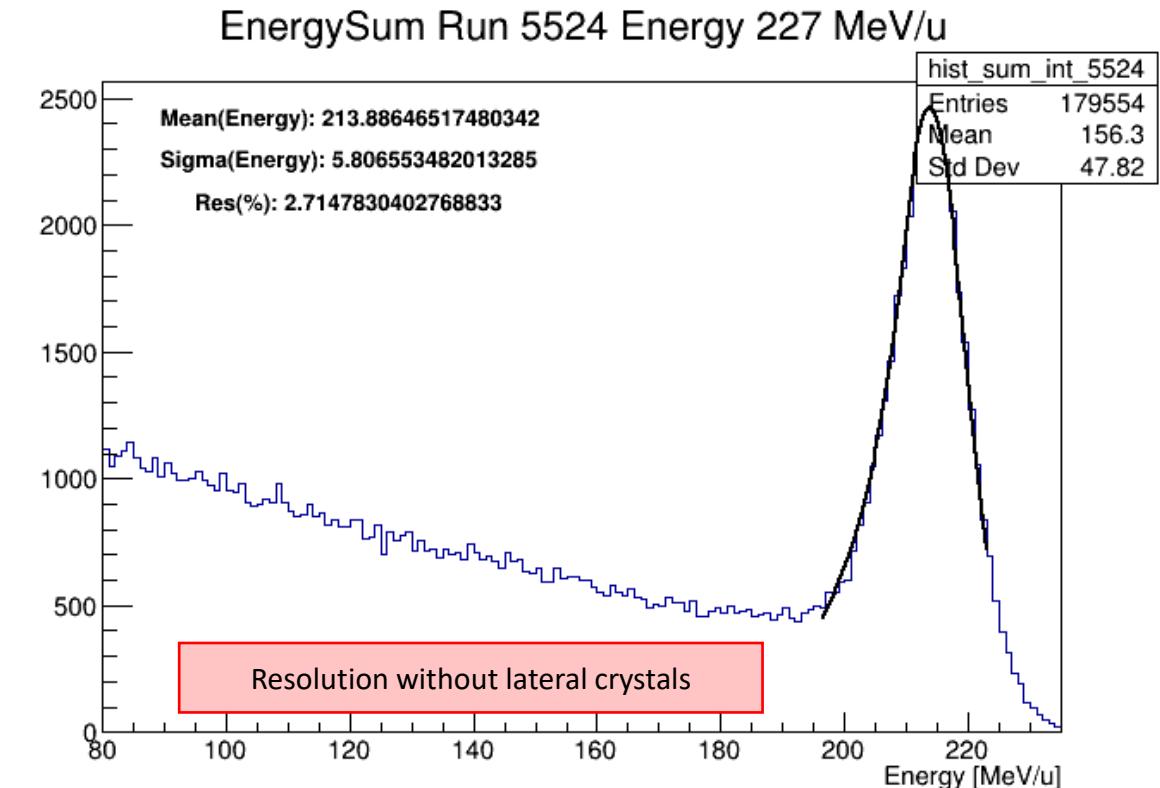
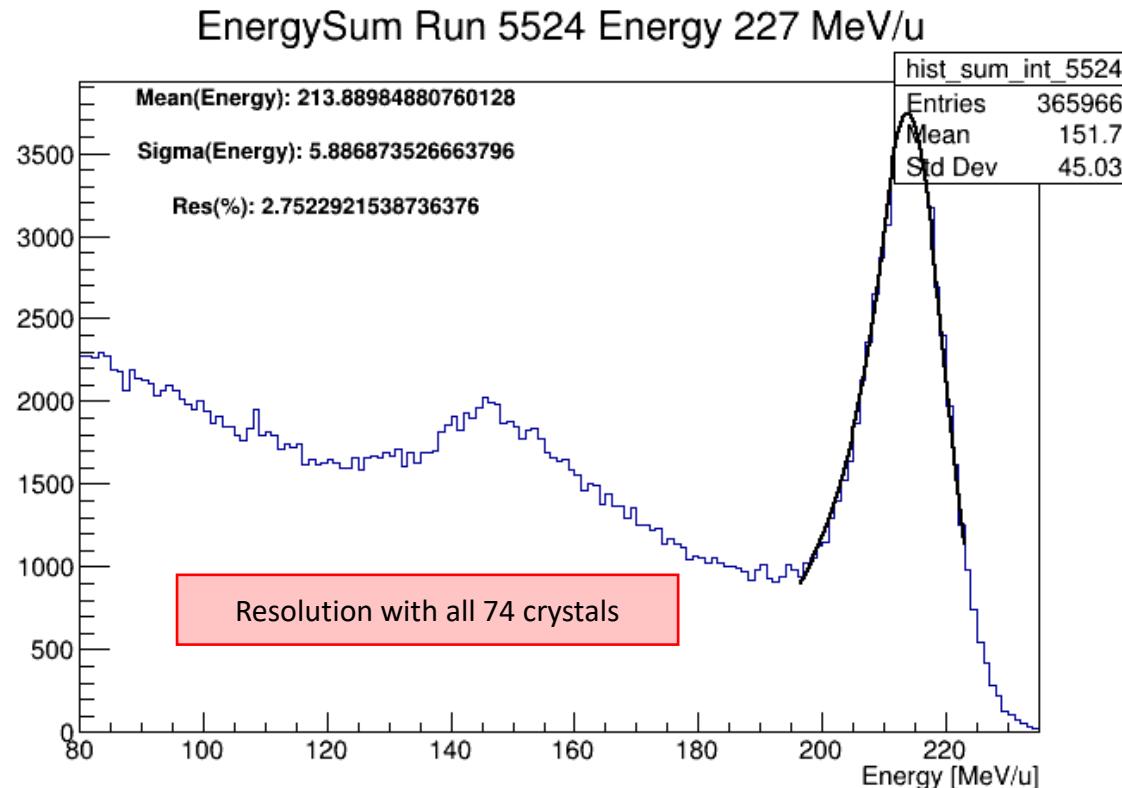
Amplitude distribution equalized with $p_0_{23}/p_0_{\text{cry}}$

$$ADC(E) = \frac{p_0 x^2}{1 + p_1 x + p_2 x^2}$$

Lateral crystals have dirty peaks

Proton 227 MeV/u Integral resolution $p0_{23}/p0_{\text{cry}}$ + energy conversion

How HIT energy calibration method behave with CNAO proton and shift?

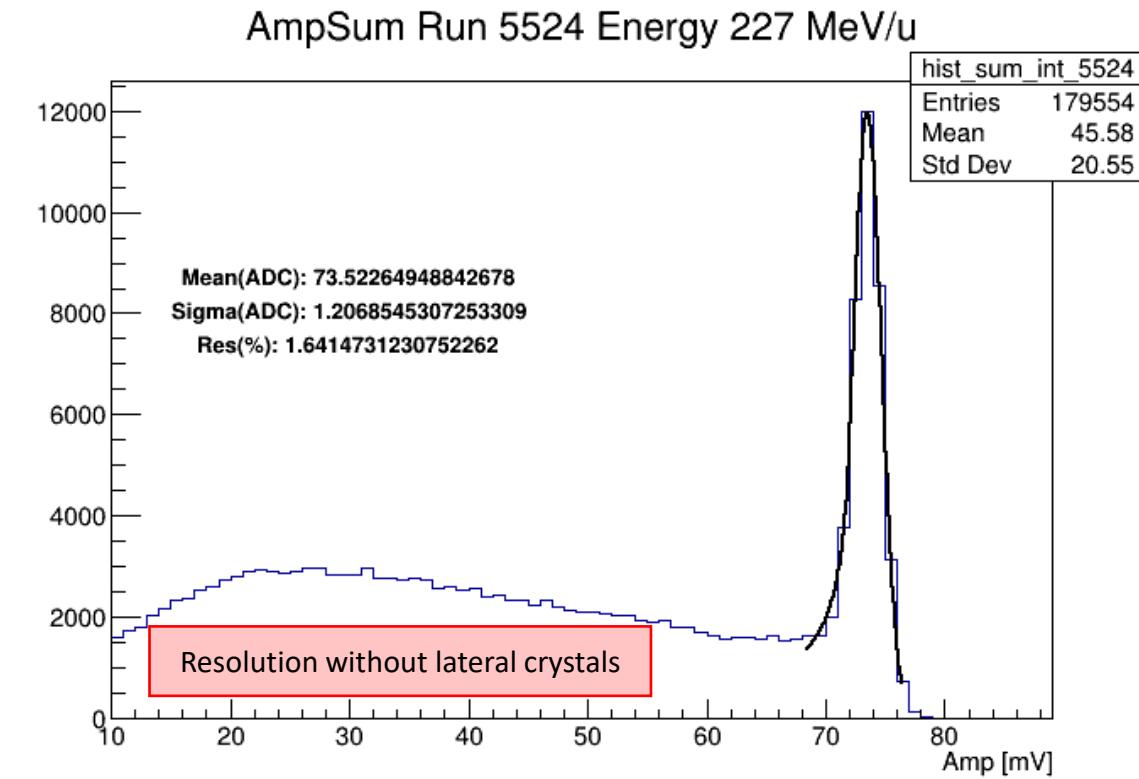
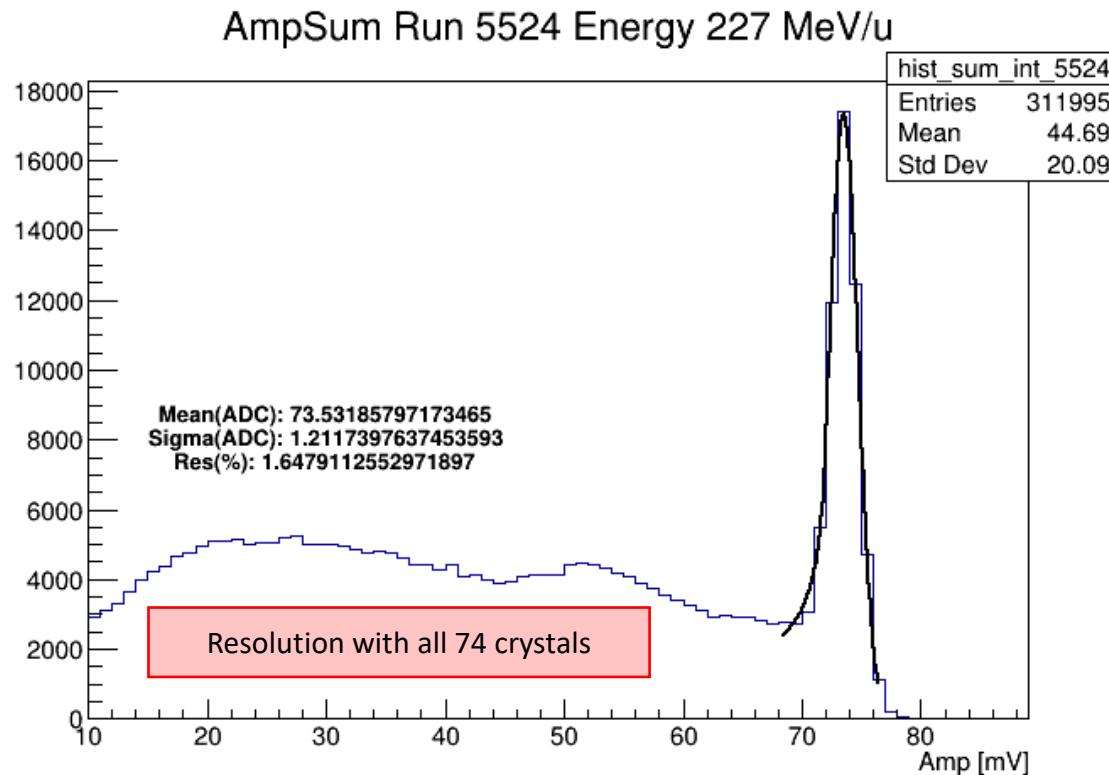


Equalization of amplitude distribution with $p0_{23}/p0_{\text{cry}}$, then energy calibration function has been applied (HIT parameter measured for cry 23).



Proton 227 MeV/u Integral resolution with ProtonPeak₂₃/ProtonPeak_{cry} intercalibration factor

Can we achieve better resolution by using different equalisation parameters?

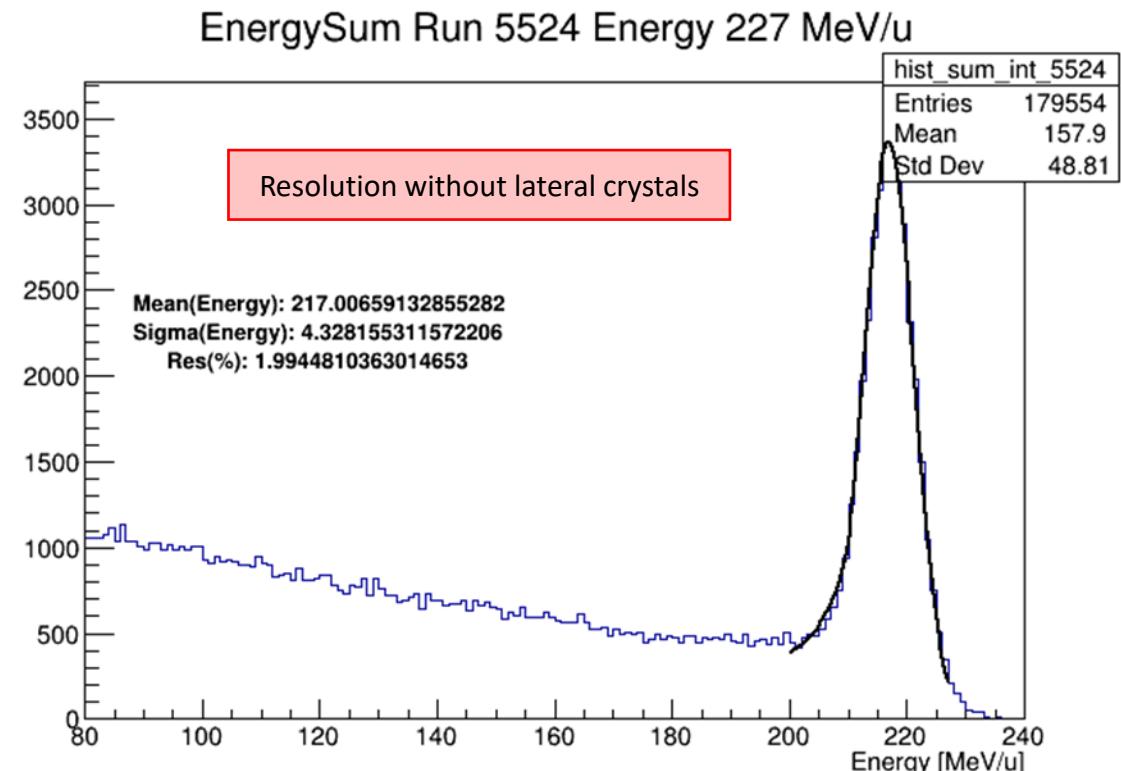
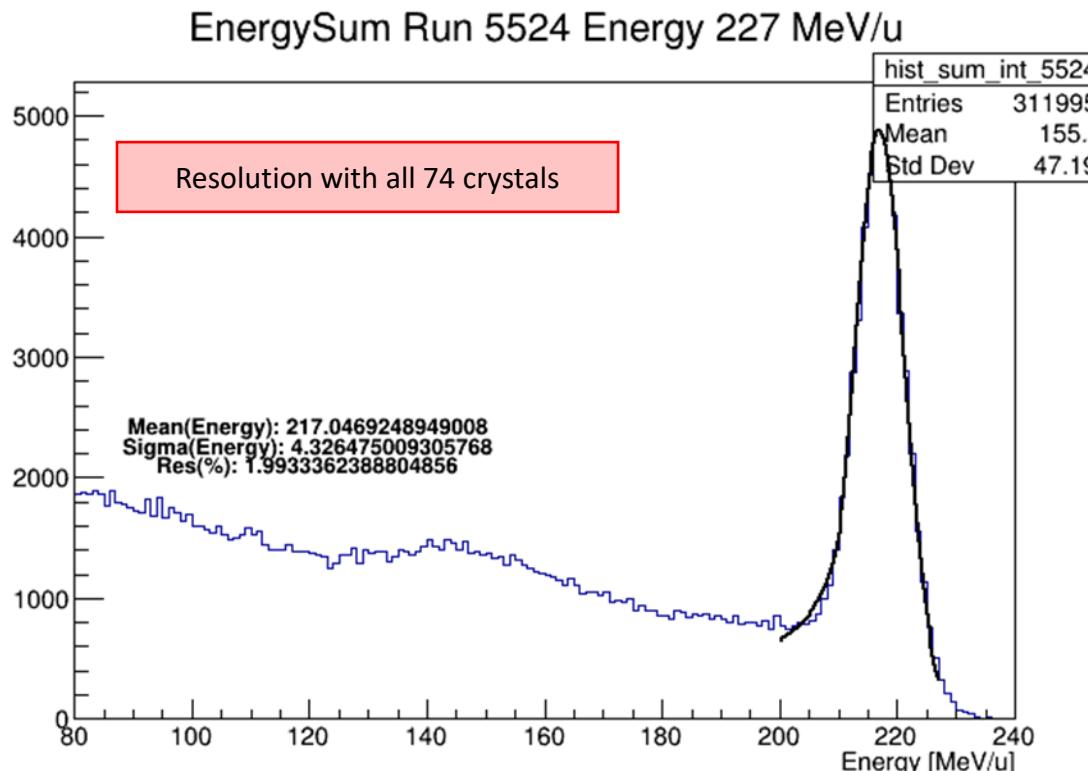


Equalization of amplitude distribution with proton peak value measured in screensaver run.
Intercalibration factor applied is ProtonPeak₂₃/ProtonPeak_{cry}



Proton 227 MeV/u Integral resolution with ProtonPeak₂₃/ProtonPeak_{cry} intercalibration factor + energy conversion

How HIT energy calibration method behave in this scenario?



Equalization of amplitude distribution with ProtonPeak₂₃/ProtonPeak_{cry}, then energy calibration function has been applied (HIT parameter measured for cry 23).

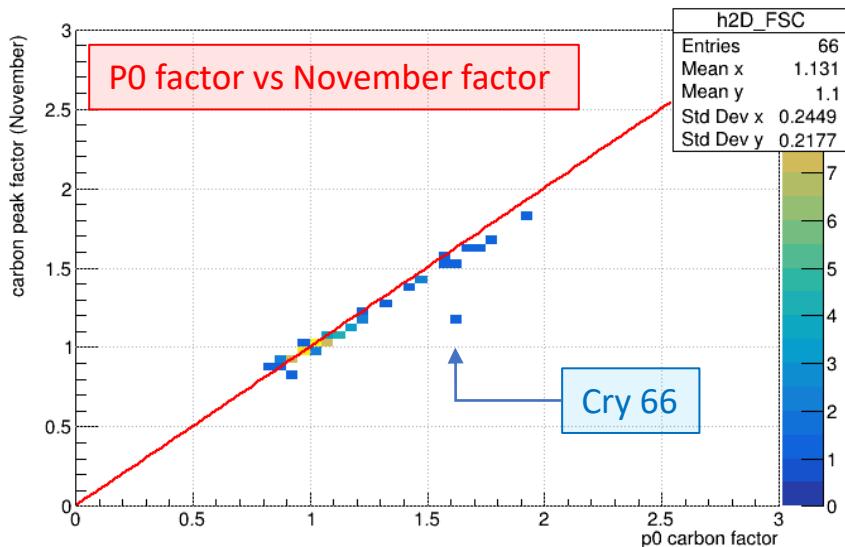


The more point we measure, the better our resolution is

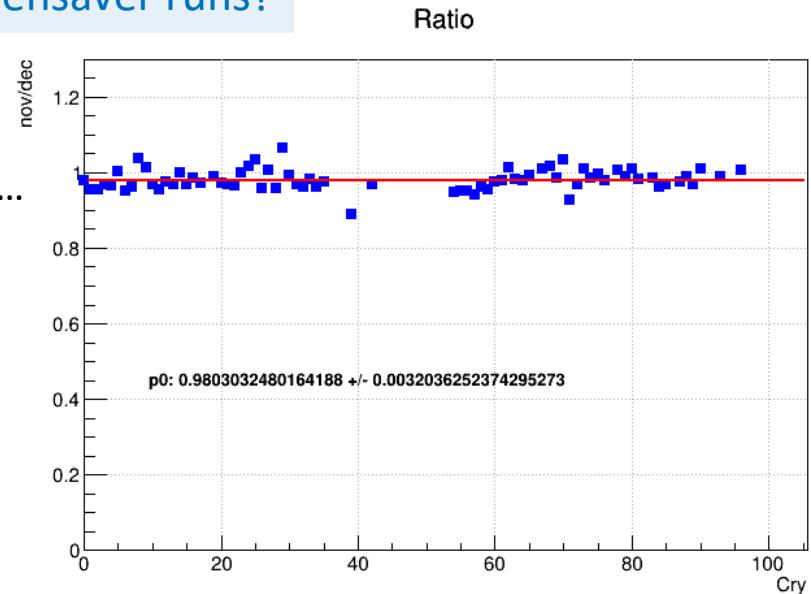


Ratio between $p0_{23}/p0_{\text{cry}}$ equalisation factor and November equalisation factor

Can we obtain equalisation factor of crystal which did not participate in screensaver runs?



Cry 66 has been excluded...



Ratio distribution in screensaver crystals

