Fit to proton spectra

Blastwave

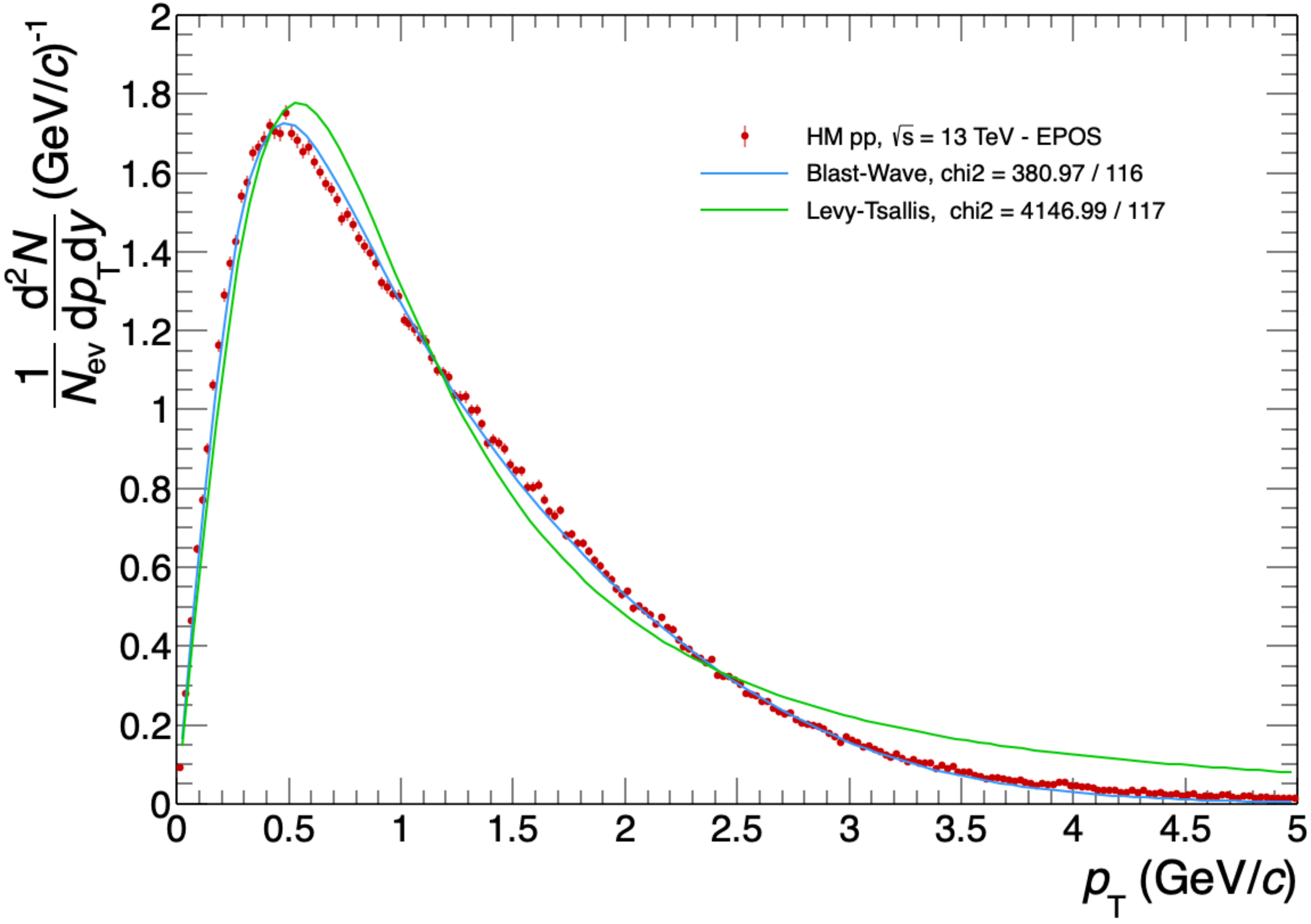
$$\frac{\mathrm{d}N}{\mathrm{d}y\,\mathrm{d}p_{\mathrm{T}}} = \mathcal{N} p_{\mathrm{T}} \int_0^1 \mathrm{d}\rho\, K_1\left(\frac{m_{\mathrm{T}}\cosh\rho}{T}\right) I_0\left(\frac{p_{\mathrm{T}}\cosh\rho}{T}\right), \text{ with } \rho = \mathrm{arctanh}(\beta_{max})$$

$$K_1\left(\frac{m_T\ \cosh\rho}{T}\right) = \int_0^\infty \cosh y\ \exp\left(-\frac{m_T\ \cosh y\ \cosh\rho}{T}\right)dy, \qquad I_0\left(\frac{p_T\ \sinh\rho}{T}\right) = \frac{1}{2\pi}\int_0^{2\pi} exp\left(\frac{p_T\ \sinh\rho\ \cos\phi}{T}\right)d\phi,$$

Levy-Tsallis

$$\frac{\mathrm{d}^2N}{\mathrm{d}y\,\mathrm{d}p_{\mathrm{T}}} = \frac{\mathrm{d}N}{\mathrm{d}y}\frac{p_{\mathrm{T}}\,(n-1)\,(n-2)}{nC[nC + m_{\mathrm{d}}\,(n-2)]}\left(1 + \frac{m_{\mathrm{T}} - m_{\mathrm{d}}}{nC}\right)^{-n},$$

This is with the mass of the deuteron, but it is exactly the sam for protons



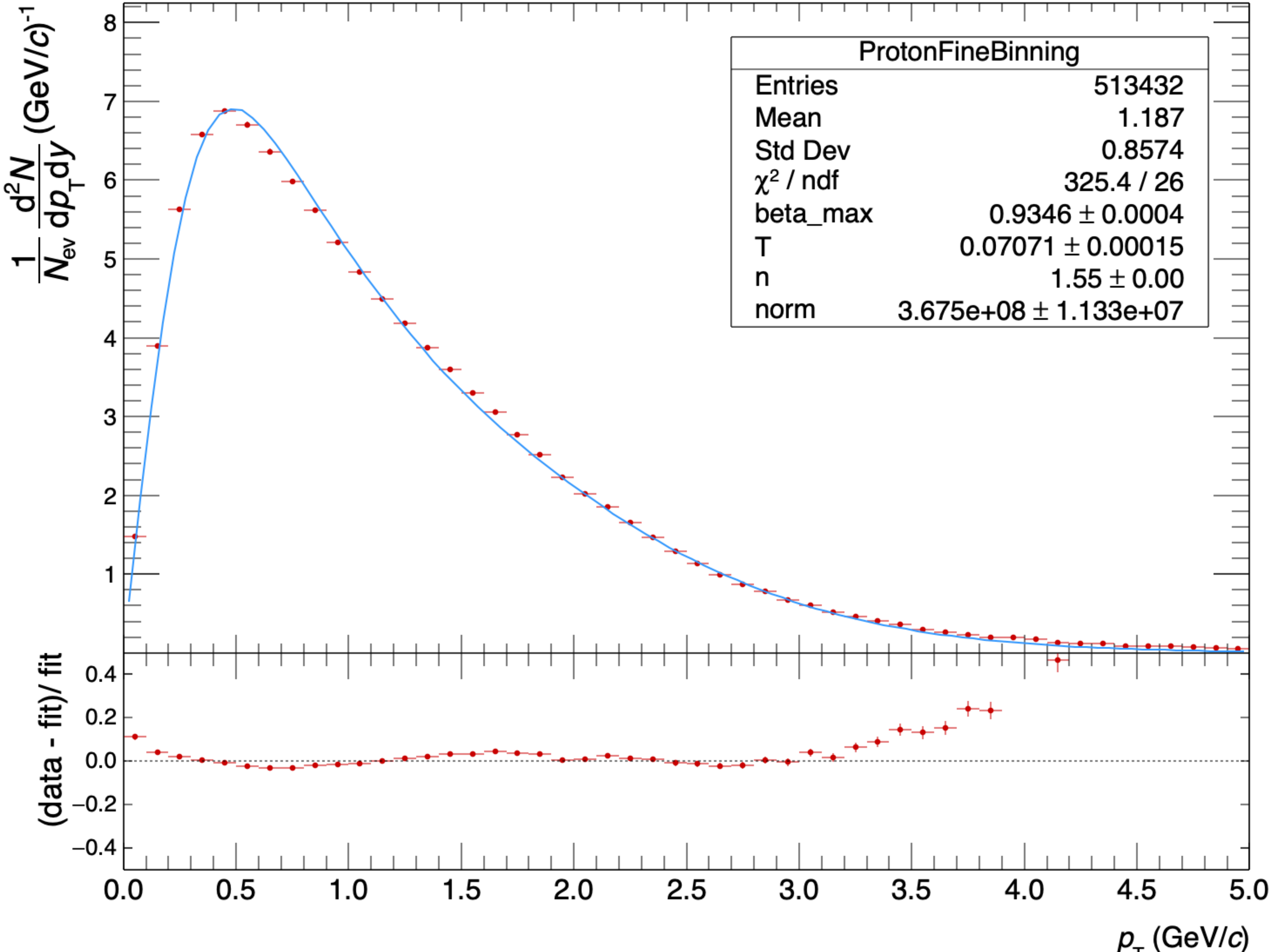
Blastwave

Mass	0.938272
β_{max}	0.935 ± 0.004
T	0.068 ± 0.001
N	1.540 ± 0.004
Norm	(1.69 ± 0.05) E+08

Levy-Tsallis

Mass	0.938272
C	0.22 ± 0.01
N	2.96 ± 0.02
Norm	3.18 ± 0.01

There's no way to fit it with a LT!!



ProtonFineBinning
Entries 513432
Mean 1.187
Std Dev 0.8574
χ² / ndf 325.4 / 26
beta_max 0.9346 ± 0.0004
T 0.07071 ± 0.00015
n 1.55 ± 0.00
norm 3.675e+08 ± 1.133e+07
1/N_ev d²N/dp_T dy (GeV/c)⁻¹
(data - fit)/ fit
p_T (GeV/c)

AOB

- Checked for available MC production with pp @ 900 GeV:
    - 1M events
- Production with 300M pp collisions @ 13 MB
    - Talked with Ante: an instability was found in the FORTRAN code of EPOS, which causes 15% job failure
        - In contact with Klaus Werner for solving this -> 100% success rate and submission asap
        - It is the best thing, because there's a limit on the number of files in a directory (much fragmentation is not possible)