

Update on resolution fit

UHH CMS SUSY Meeting

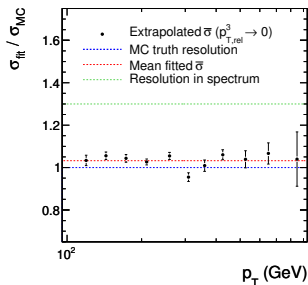
Matthias Schröder

May 26th, 2010



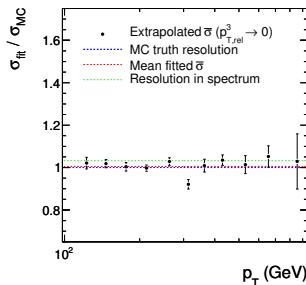
Influence of resolution in spectrum (1)

- MC truth resolution has been used to describe spectrum
- Test of influence on fitted resolution by variation of σ_{MC}
- Result from true resolution: $\sigma_{fit} = 1.009 \cdot \sigma_{MC}$



• Iteration 1:

- ▶ Spectrum: $\sigma_{spec} = 1.3 \cdot \sigma_{MC}$
- ▶ Result: $\sigma_{fit} = 1.033 \cdot \sigma_{MC}$



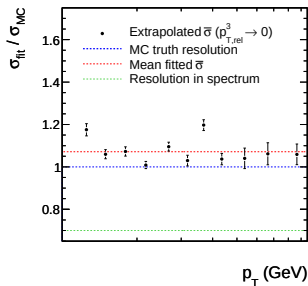
• Iteration 2:

- ▶ Spectrum: $\sigma_{spec} = 1.033 \cdot \sigma_{MC}$
- ▶ Result: $\sigma_{fit} = 1.005 \cdot \sigma_{MC}$

Influence of resolution in spectrum (2)

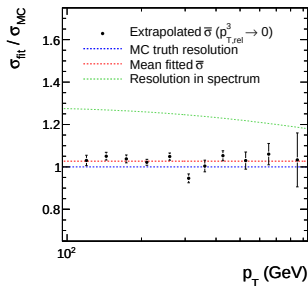
- Downward variation

- ▶ Spectrum: $\sigma_{\text{spec}} = 0.7 \cdot \sigma_{\text{MC}}$
- ▶ Result: $\sigma_{\text{fit}} = 1.071 \cdot \sigma_{\text{MC}}$



- Variation of $\vec{b}$ in σ

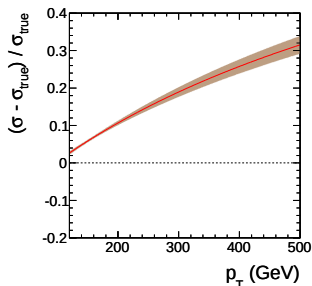
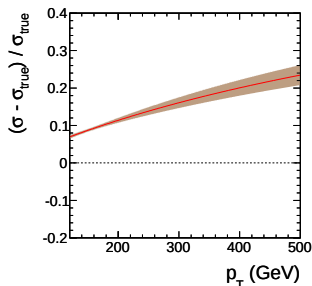
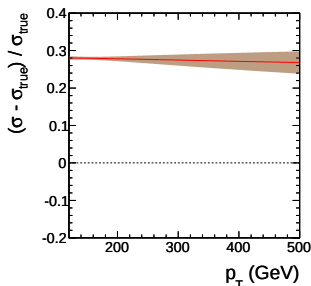
- ▶ Spectrum: $b_{1,\text{spec}} = 1.3 \cdot b_{1,\text{MC}}$
- ▶ Result: $\sigma_{\text{fit}} = 1.027 \cdot \sigma_{\text{MC}}$



- Only weak influence on fitted resolution
- Iterative procedure applicable, quick convergence

Fit of p_T dependent σ

- p_T^{gen} ordered jets, first jet $120 < p_{T,1}^{\text{gen}} < 500$ GeV



- $p_{T,\text{rel}}^3 < 0.1$

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- For 2. jet

- $p_{T,\text{rel}}^3 < 0.06$
- For 2. jet

$$p_T^{\text{true}} \rightarrow \frac{p_{T,2}^{\text{gen}}}{p_{T,1}^{\text{gen}}} \cdot p_T^{\text{true}}$$

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Response plot for JetMET PAS

