JEWEL

HEPIC-Instituto de Física

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About the cross-section

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$$\sigma_i(E,T) = \int_0^{|\hat{t}|_{max}(E,T)} d|\hat{t}| \int_{x_{min}(|\hat{t}|)}^{x_{max}(|\hat{t}|)} dx \sum_{j\in\{q,\overline{q},g\}} f_j^i(x,\hat{t}) \frac{\mathrm{d}\sigma}{\mathrm{d}\hat{t}}(x\hat{s},|\hat{t}|) \tag{1}$$

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Here E stands for the parton energy and T for the local temperature. $\hat{s}$ is the center of mass energy of the scattering center plus propagated parton system. $\hat{t}$ stands for the propagated parton current virtuality.

4-Momentum Subtraction

JEWEL authors studied 2 ways of proceding on the background subtraction procedure:

- 4-Momentum Subtraction;
- Grid Subtraction 1;
- Grid Subtraction 2;

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4-Momentum

- Cluster initial jet collection.
- Compile a list of thermal momenta.
- For each jet, get list of thermal momenta that have $\Delta R < 1 \times 10^{-5}$ with a jet constituent.
- Sum the list's four-momenta.
- Subtract it from jet four-momenta.

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Grid Sub 1

- Cluster initial jet collection.
- Compile a list of thermal momenta.
- Define a grid resolution and place it over jets.
- Sum the list's four-momenta of both thermal and jet constituent in each cell.
- Subtract thermal four-momenta from jet constituent four-momenta.
- Re-cluster jet.

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Grid Sub 2

- Compile a list of thermal momenta.
- Define grid resolution over entire event.
- Sum the list's four-momenta of both thermal and every particle(non-thermal) in each cell.
- Subtract thermal four-momenta from "normal" four-momenta.
- Cluster jet.

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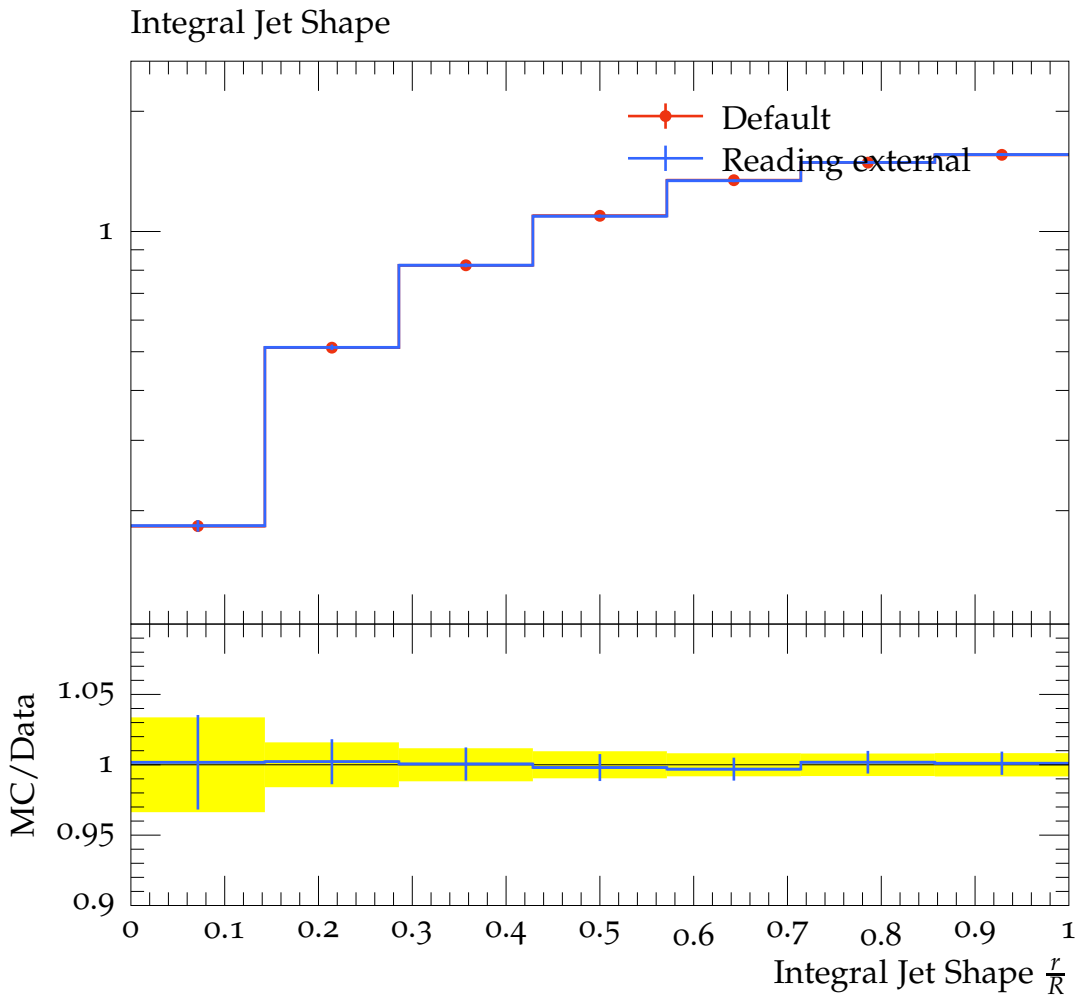
Preliminary Results



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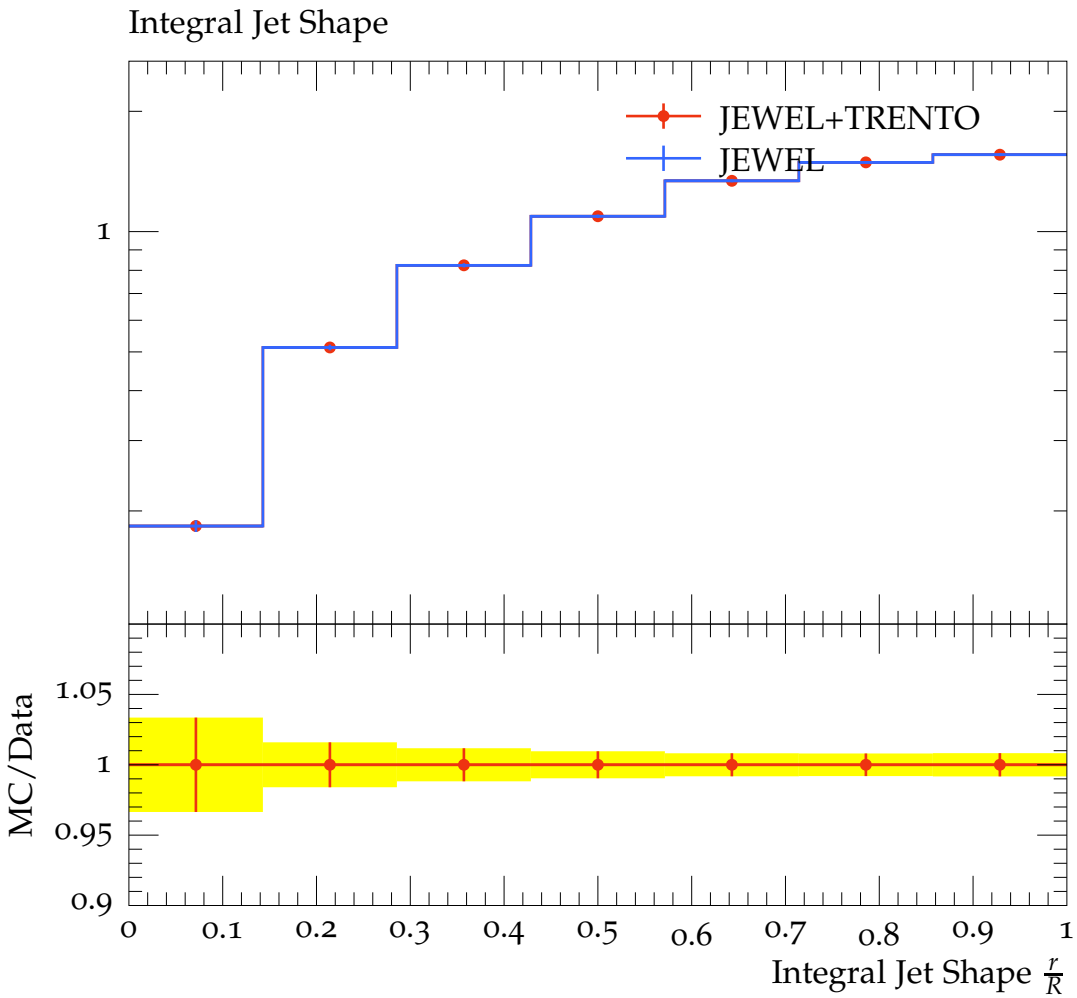

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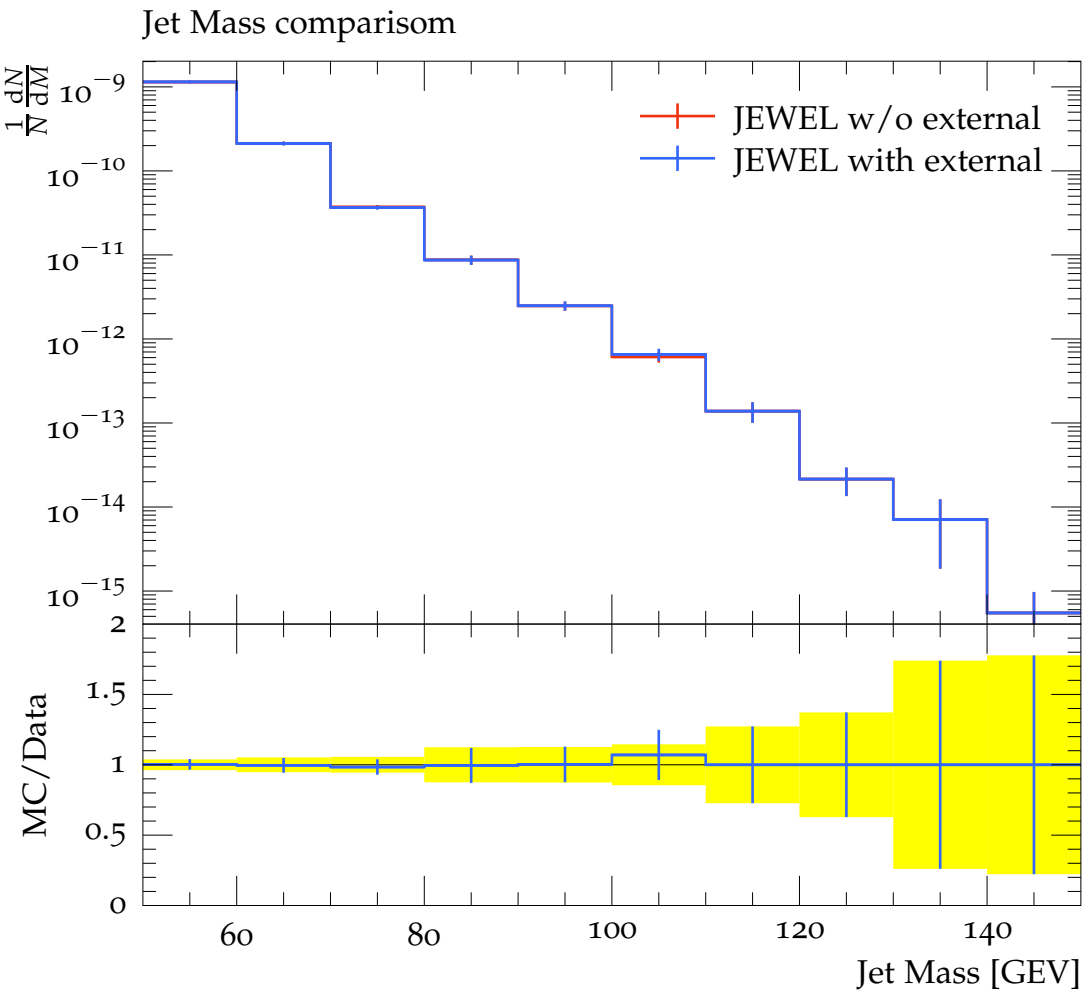

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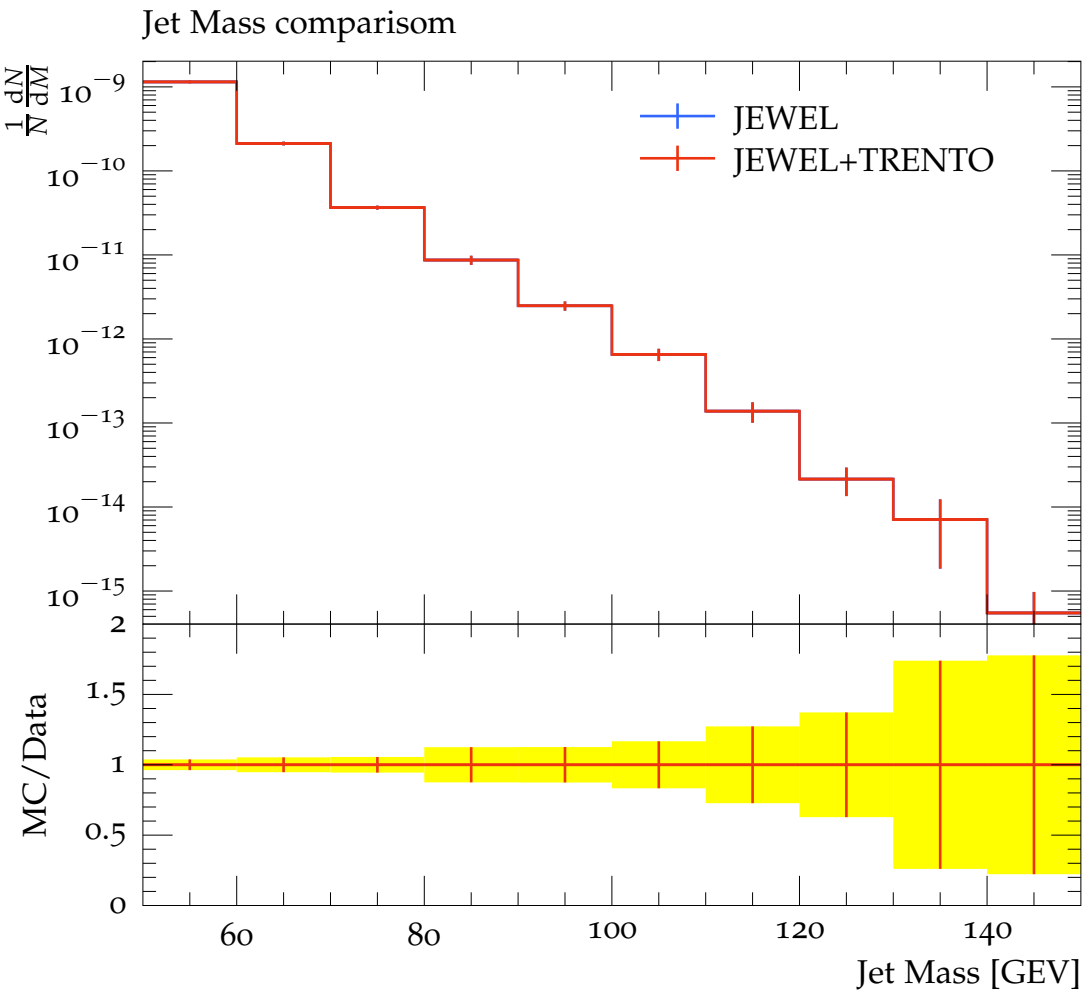

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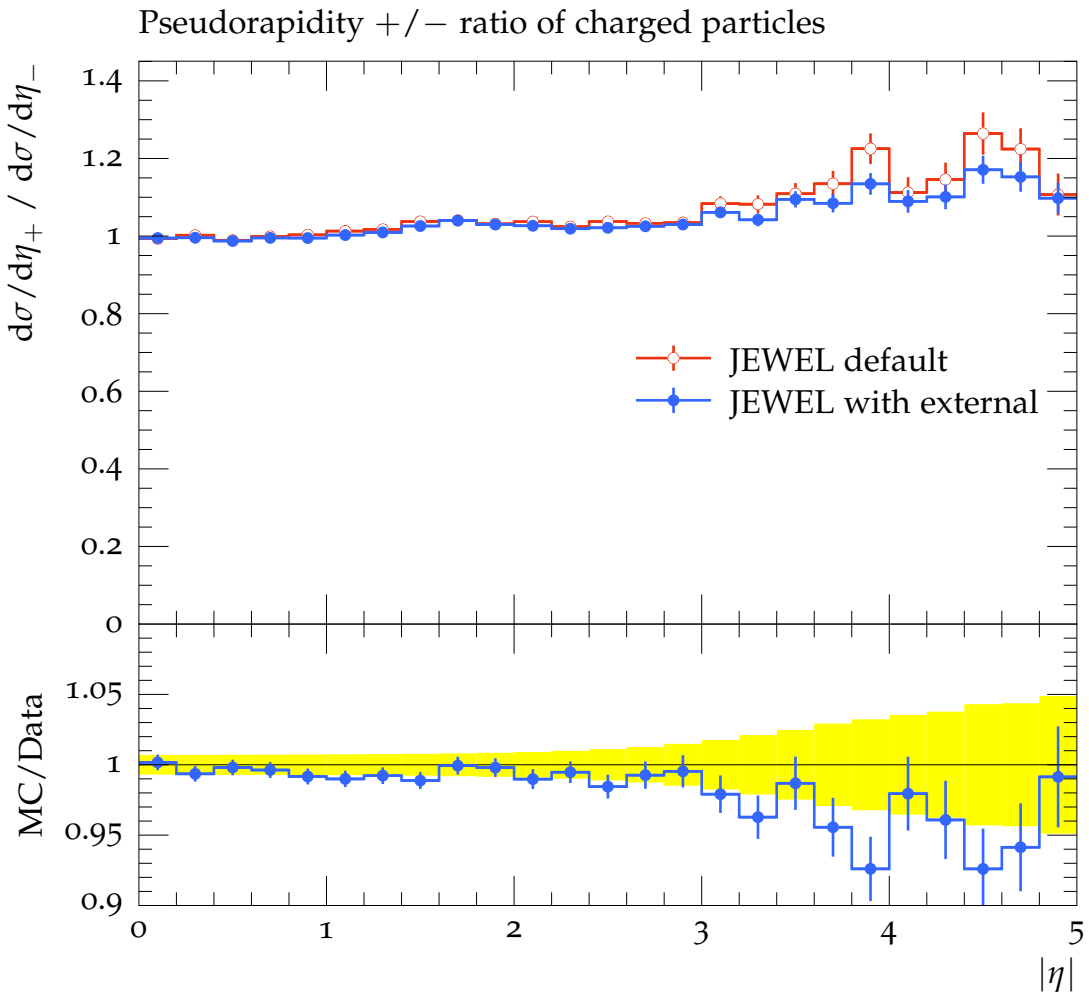

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