



data/MC comparison

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- ☐ Introduction
- ☐ Kinematic distributions
- ☐ Resolution plots
- ☐ Scale plots
- ☐ Summary

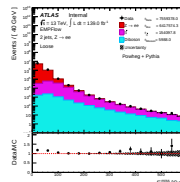
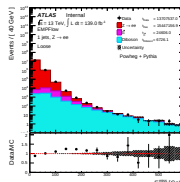
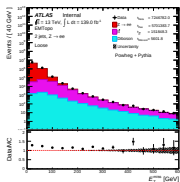
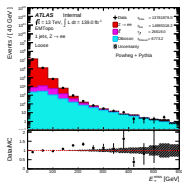
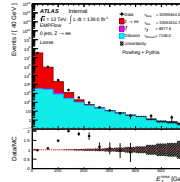
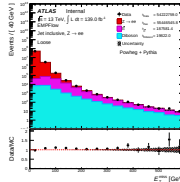
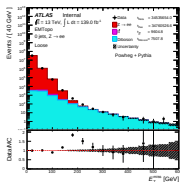
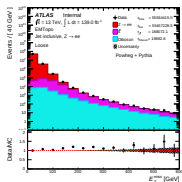
- ☐ Today I'll show data/MC comparison for Zee and $Z_{\mu\mu}$ events.
- ☐ I'm going to show kinematic distributions, resolution and scale plots.
- ☐ I'll always compare the EMPFlow to EMTopo for both events.
- ☐ Last time I was missing some $t\bar{t}$ samples.
- ☐ $t\bar{t}$ events plots are coming soon.

The E_T^{miss} distribution

Zee events

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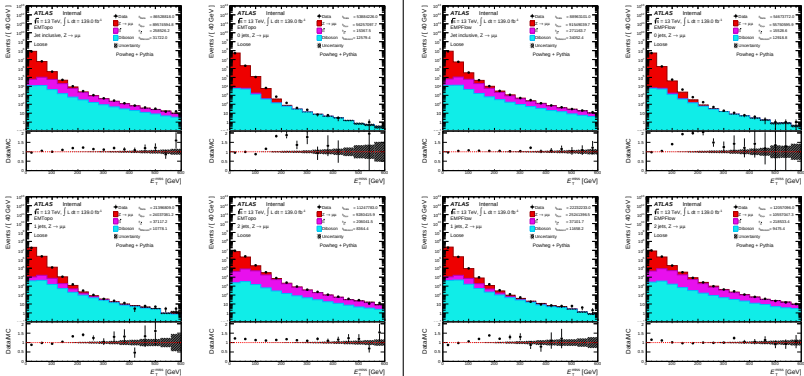
□ Inclusive jet, 0-jets, 1-jets and 2-jets



□ MET for EMTopo

□ MET for EMPFlow

☐ Inclusive jet, 0-jets, 1-jets and 2-jets



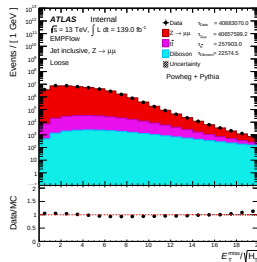
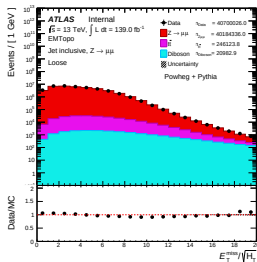
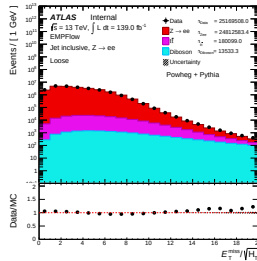
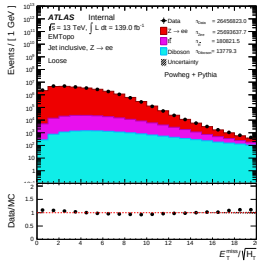
☐ MET for EMTopo

☐ MET for EMPFlow

The $E_T^{\text{miss}} / \sqrt{H_T}$ distribution

For Zee and $Z\mu\mu$

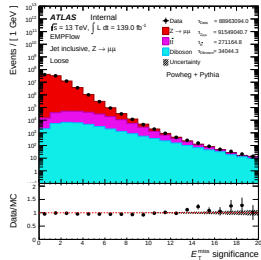
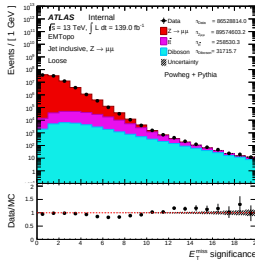
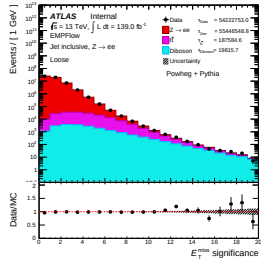
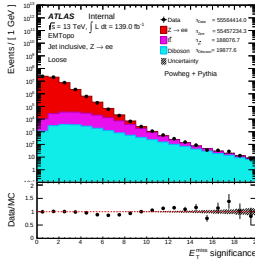
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The E_T^{miss} significance distribution

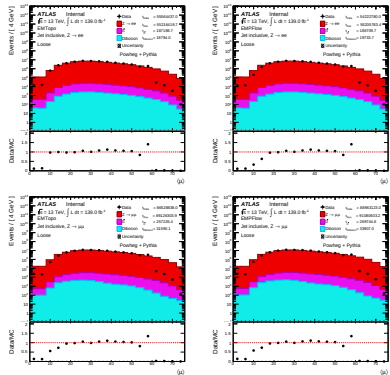
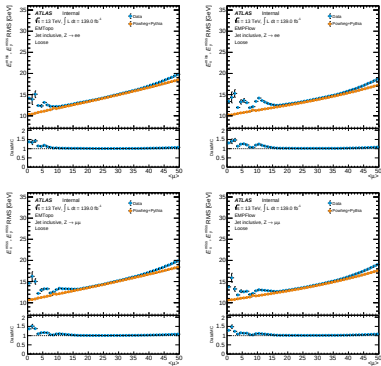
For Zee and $Z\mu\mu$

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Resolution plots

$\langle \mu \rangle$ for Zee and $Z\mu\mu$

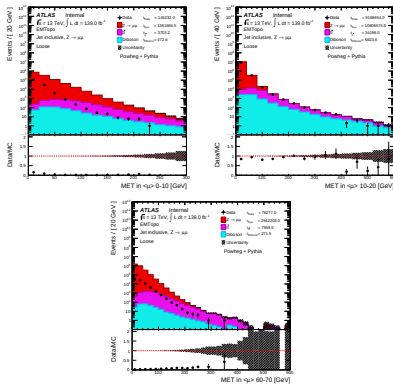
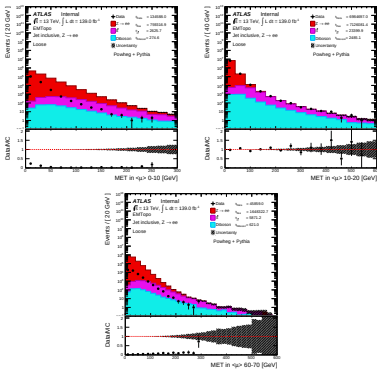


- ☐ We see a strange behaviour for data at $\langle \mu \rangle$ less than 10 (EMTopo) and 15 (EMPFlow).
- ☐ The $\langle \mu \rangle$ is almost zero in the low region (right side).

Resolution plots

Looking at the MET with different $\langle\mu\rangle$ slices for Zee and $Z\mu\mu$

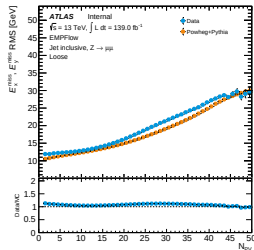
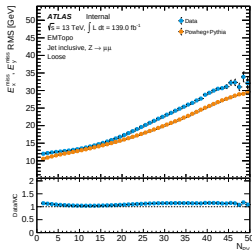
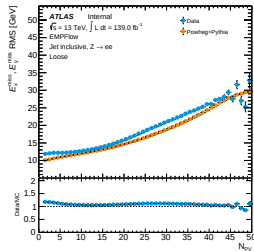
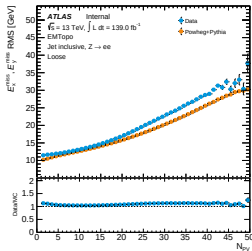
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Resolution plots

N_{PV} for Zee and $Z\mu\mu$

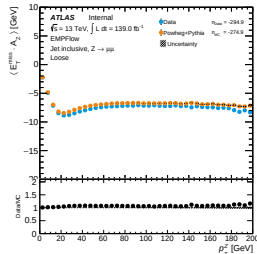
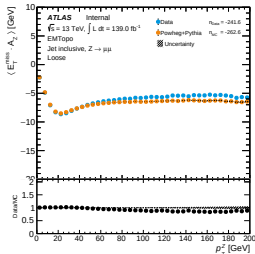
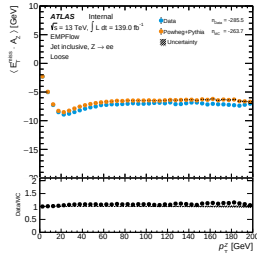
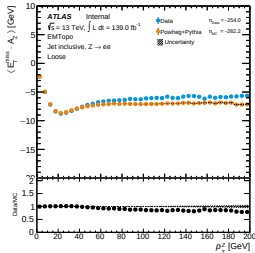
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The scale plots

For Zee and $Z_{\mu\mu}$

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- ☐ Showed kinematic distributions for the MET and MET significance.
- ☐ Resolution: Still didn't come up with a conclusion for the data problem for $\langle\mu\rangle$ less than 15!
- ☐ The scale plots are fine.
- ☐ Let me know if there are more plots that you want to see.

To do next ...

- ☐ Run Sherpa samples and compare them to Powheg ones
- ☐ Include $t\bar{t}$ events
- ☐ Variation of the MET working points



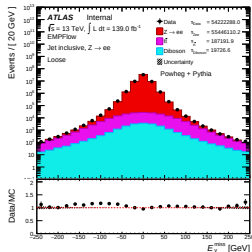
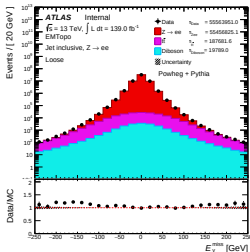
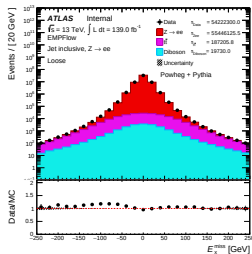
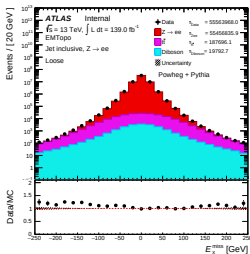
Thank you!



Additional slides

MET components for Zee events

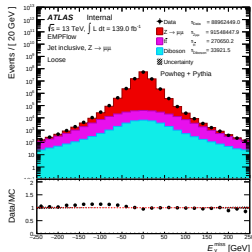
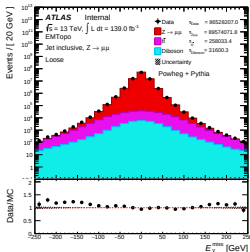
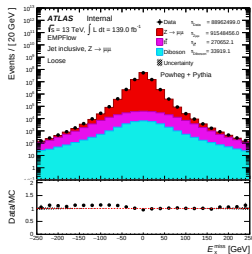
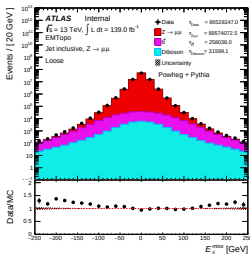
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Additional slides

MET components for $Z\mu\mu$ events

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Additional slides

EMPFLOW: MET with different $\langle\mu\rangle$ slices for Zee and $Z\mu\mu$

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