

End-to-End Optimization of Generative AI for Robust Background Estimation

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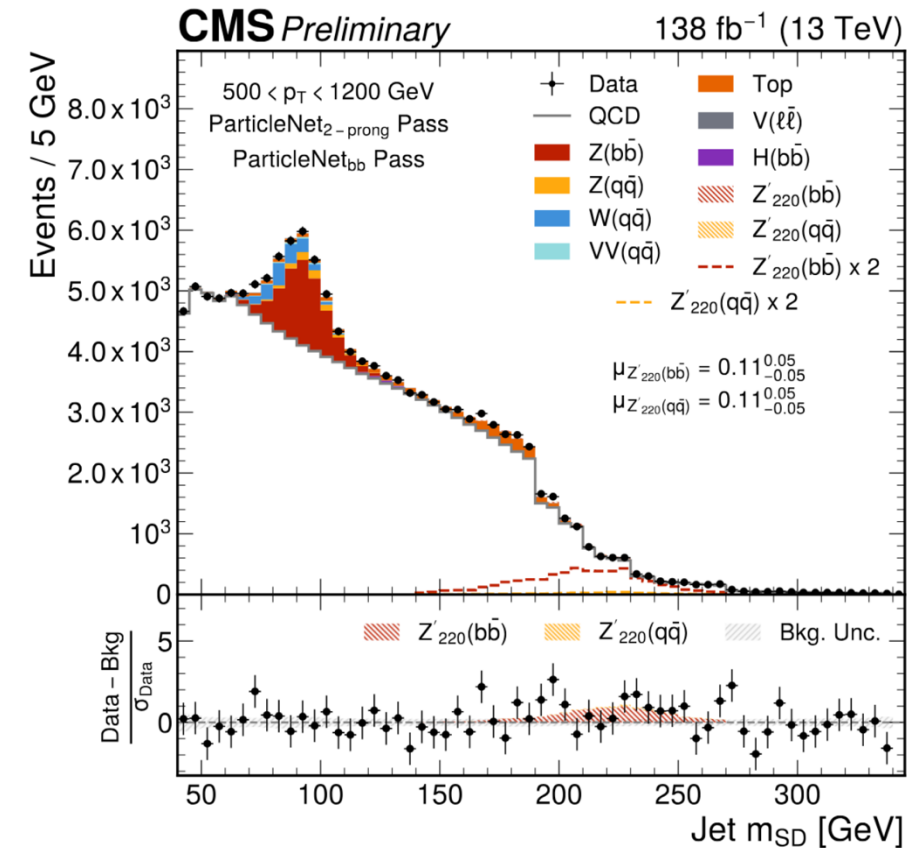
MOTIVATION: Why Generative AI background models?

→ fewer computational needs, data-driven generative models, ...

PROBLEM: To what extent can we trust Generative AI?

Generative models generalize well, but:

- in low-statistics regions they may be less precise
- need to **model uncertainties** to ensure **robust anomaly detection** in data-limited scenarios

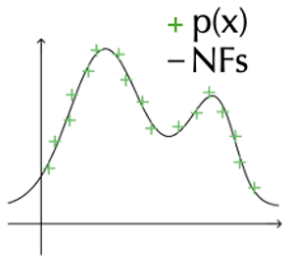


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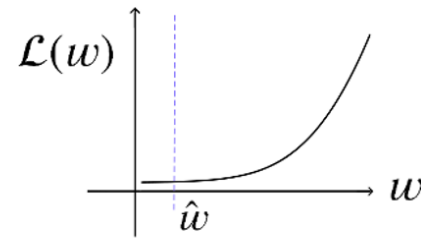
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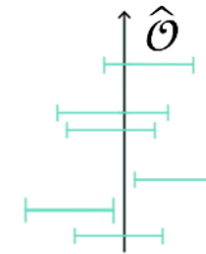
SCHEME OF THE END-TO-END METHOD



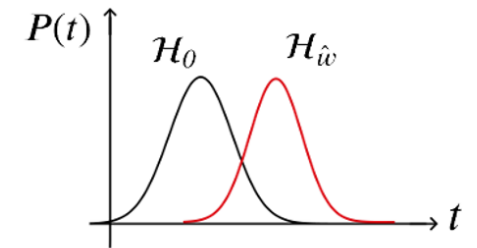
**BACKGROUND MODELING
WITH NORMALIZING FLOWS**



**FREQUENTIST UNCERTAINTY
ESTIMATION WITH $W_i F_i$ ENSEMBLES**



COVERAGE CHECK

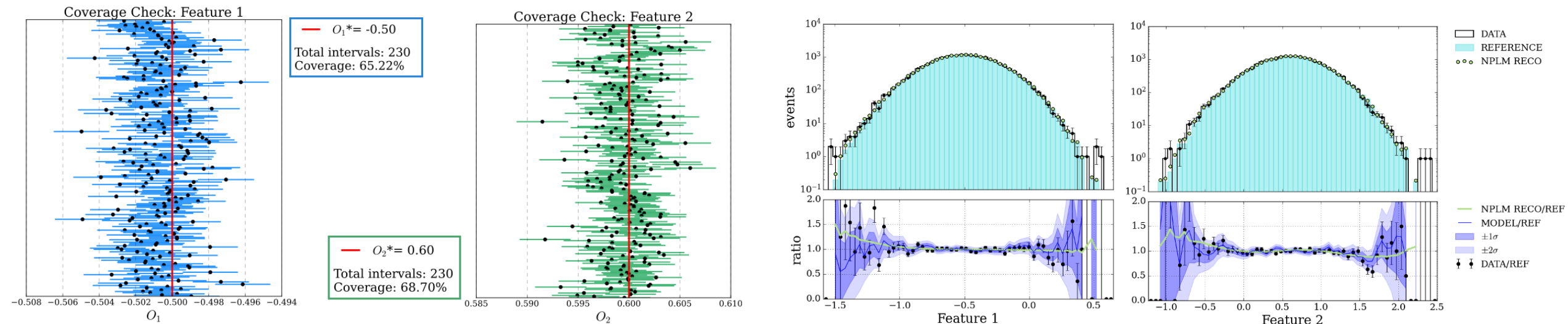


GOODNESS OF FIT

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Want to know more?

Visit me at the poster session on Wednesday