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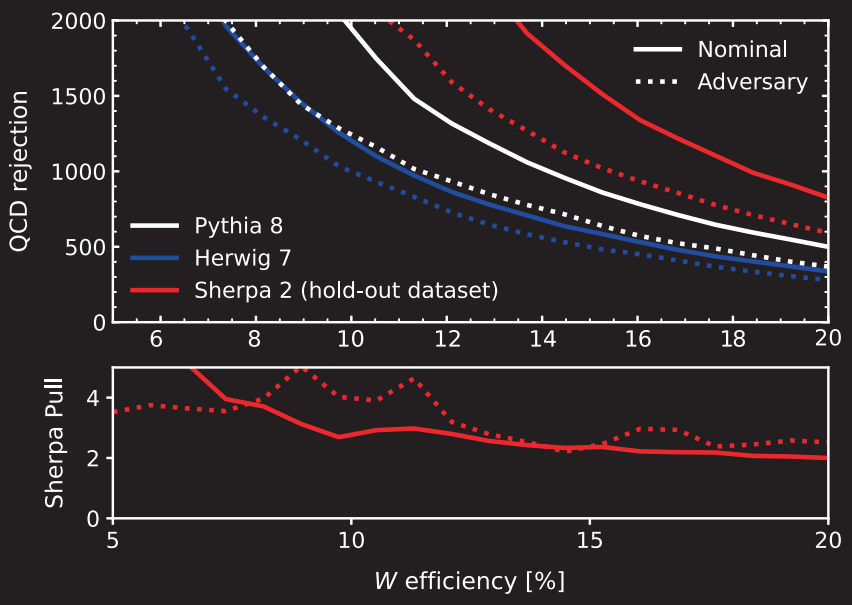
Particles and Fields



The QCD rejection (inverse QCD efficiency) as a function of the *W* jet efficiency for classifiers applied to PYTHIA, HERWIG, and SHERPA jets. The solid lines correspond to the nominal classifier trained with PYTHIA while the dotted lines correspond to the adversarial setup that uses both PYTHIA and HERWIG (SHERPA is a hold-out dataset). The bottom panel shows the pull, which is the difference between PYTHIA and SHERPA divided by the uncertainty defined by the difference between PYTHIA and HERWIG. While adversarial training reduces the difference in performance between PYTHIA and HERWIG, the difference to SHERPA remains large, indicating that the true uncertainty will be underestimated if a third independent sample is unavailable

From A. Ghosh and B. Nachman on: A cautionary tale of decorrelating theory uncertainties. Eur. Phys. J. C 82, 46 (2022).

Società Italiana di Fisica

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