PDF uncertainty v (ideal) tagging purity

p_t=2000 GeV

NNPDF31_nnlo_as_0118

qq contamination

gg purity

$\sqrt{s}$ = 13 TeV, anti-k_t(0.4), |y|<4.5

PDF uncertainty

PDF uncertainty v (ideal) tagging purity

Legend:
- PDF uncertainty (solid blue line)
- syst. uncertainty (dotted red line)
- stat. uncertainty (dashed green line)

x-axis: gg purity

y-axis: uncertainty (%)

$\mathcal{L} = 300\ \text{fb}^{-1},\ \varepsilon_g = 0.42$
$p_t = 2000\ \text{GeV}$
NNPDF31_nnlo_as_0118

$\sqrt{s} = 13\ \text{TeV, anti-}k_t(0.4),\ |y| < 4.5$

quark mistag rate

$\mathcal{L}=300$ fb^{-1}, $\varepsilon_g = 0.42$
$p_t=2000$ GeV
NNPDF31_nnlo_as_0118

$\sqrt{s} = 13$ TeV, anti-$k_t(0.4)$, $|y|<4.5$

ε_q

gg purity

ROC curves for a few selected taggers

Casimir: $(1 - \varepsilon_g)^{C_F} = (1 - \varepsilon_q)^{C_A}$
ECF$^{(0.5)}$ [LH15]
$n_{LH}^{(1\,\text{GeV})}$ [LH19]
NN-like (extrapolated)

$p_t = 2000$ GeV
Pythia8.230(Monash13)

$\sqrt{s} = 13$ TeV, anti-k_t(0.4), $|y| < 4.5$

ε_g

ε_q

Uncertainties for a few selected taggers

Legend:
- Casimir (red)
- ECF$^{(0.5)}$ [LH15] (green)
- $n_{LH}^{(1\,\text{GeV})}$ [LH19] (blue)
- NN-like (extrap.) (black)

solid: δ_{PDF}
dashed: δ_{stat}
dotted: δ_{syst}

$p_t = 2000$ GeV, $\mathcal{L} = 300$ fb^{-1}
NNPDF31_nnlo_as_0118
Pythia8.230(Monash13)

$\sqrt{s} = 13$ TeV, anti-$k_t(0.4)$, $|y| < 4.5$

x-axis: ε_g
y-axis: uncertainty (%)