

Update on Powheg ew

(continuation of previous talk in May)

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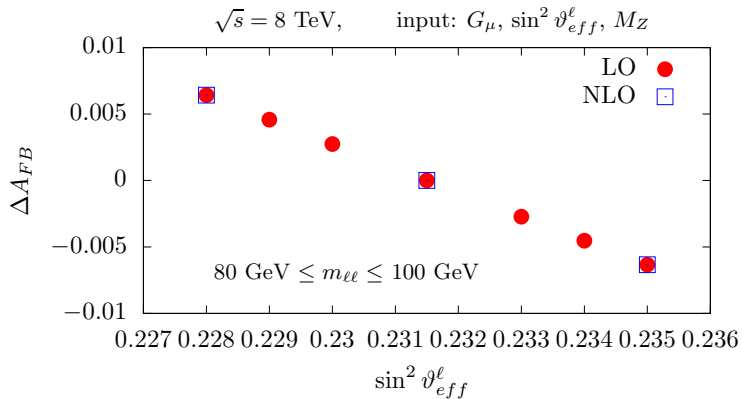
INFN Sezione di Pavia

LHC EW Precision sub-group meeting
16 December 2019, CERN

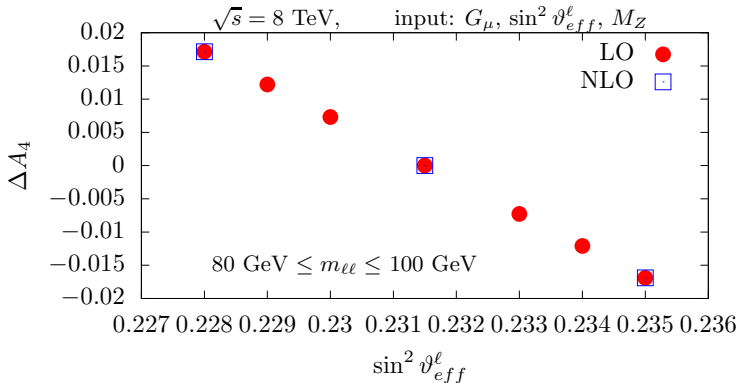
with M. Chiesa and the Powheg_ew team

Just a simple exercise

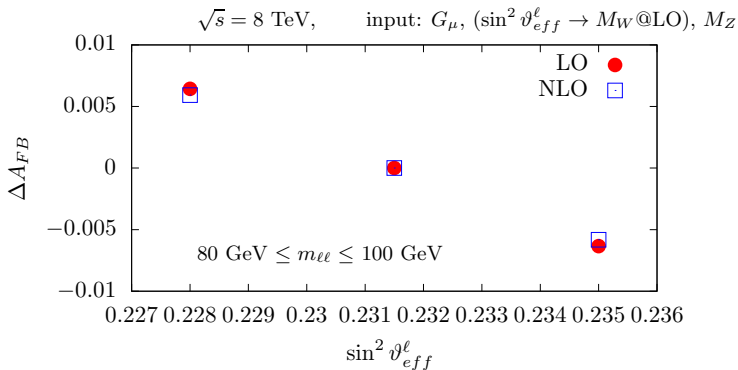
- sensitivity of A_{FB} to variations of $\sin^2 \vartheta_{eff}^\ell$
- no cut on lepton momenta except for
- $80 \text{ GeV} \leq M_{\ell\ell} \leq 100 \text{ GeV}$



$$A_4 = \frac{8}{3} A_{FB}$$

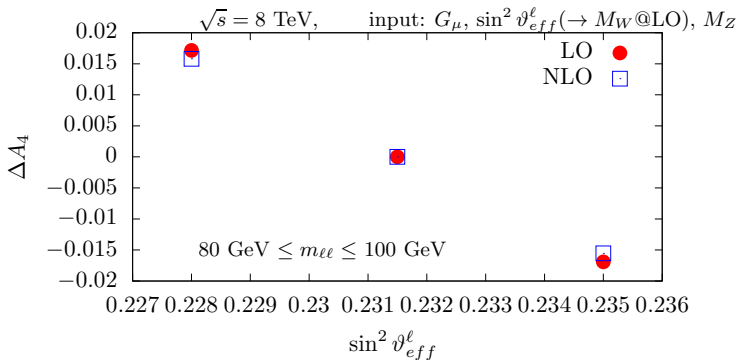


- $\bullet \sin^2 \vartheta_{eff}^\ell = 0.228 \implies A_{FB}^{LO} = 0.0338(1), A_{FB}^{NLO} = 0.0337(1)$
- $\bullet \sin^2 \vartheta_{eff}^\ell = 0.231499 \implies A_{FB}^{LO} = 0.02739(1), A_{FB}^{NLO} = 0.02722(1)$
- $\bullet \sin^2 \vartheta_{eff}^\ell = 0.235 \implies A_{FB}^{LO} = 0.02106(1), A_{FB}^{NLO} = 0.02088(1)$



- low stat: absolute errors $\sim 7 \cdot 10^{-4}$

$$A_4 = \frac{8}{3} A_{FB}$$



- low stat: absolute errors $\sim 7 \cdot 10^{-4}$