

Update on Bhabha A_{LR} Studies of Sensitivity to $\sin^2\theta_w$

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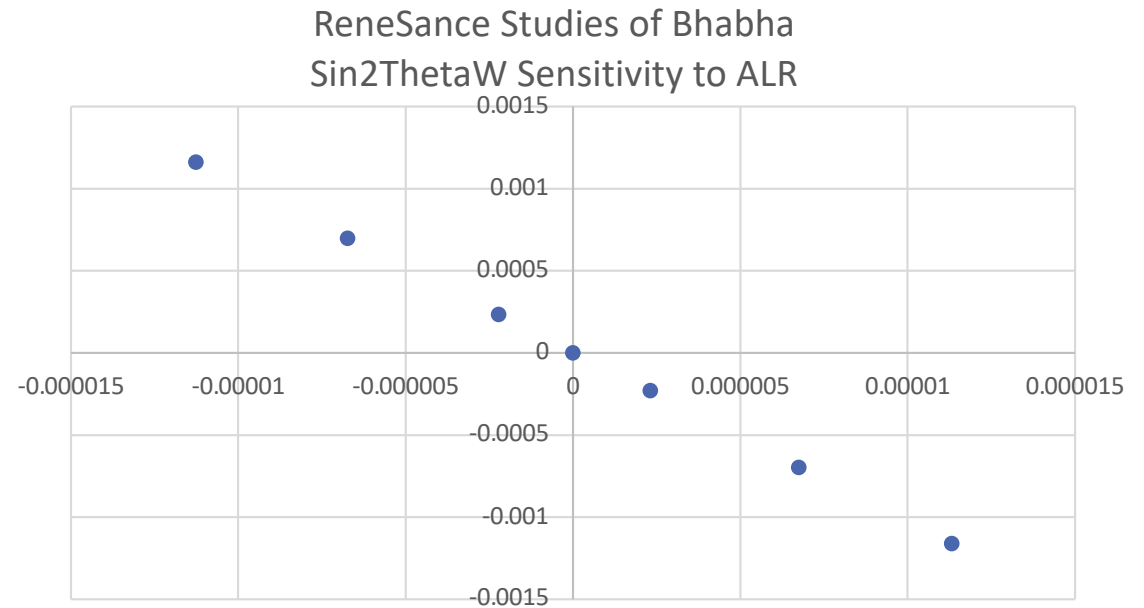
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$\sin^2\theta_W$ Sensitivity to A_{LR}

As suggested by authors of ReneSANCE, we shift values of M_W in ReneSANCE generator to determine $\sin^2\theta_W$ sensitivity to A_{LR}



With $40ab^{-1}$ we'd have an uncertainty on $\sin^2\theta_W$ from only Bhabha events of ± 0.00030

Comparable to combined SLD-LEP uncertainty of ± 0.00024 on $\sin^2\theta_W$ at the Z^0 pole involving only the Z^0 -electron couplings

(Note: recent CMS result for $\sin^2\theta_W$ from $Z^0 \rightarrow e+e^-$ is ± 0.00041)

Also comparable to the MOLLER experiment's projected uncertainty of (± 0.00028) at the lower 100 MeV energy scale

Chiral Belle including tau and muons – assuming lepton universality gives an uncertainty of ± 0.00018 - would be single most precise measurement of $\sin^2\theta_W$ (NB: ± 0.00016 (LEP + SLC))