



Study of the threshold region of top pair production at the ILC

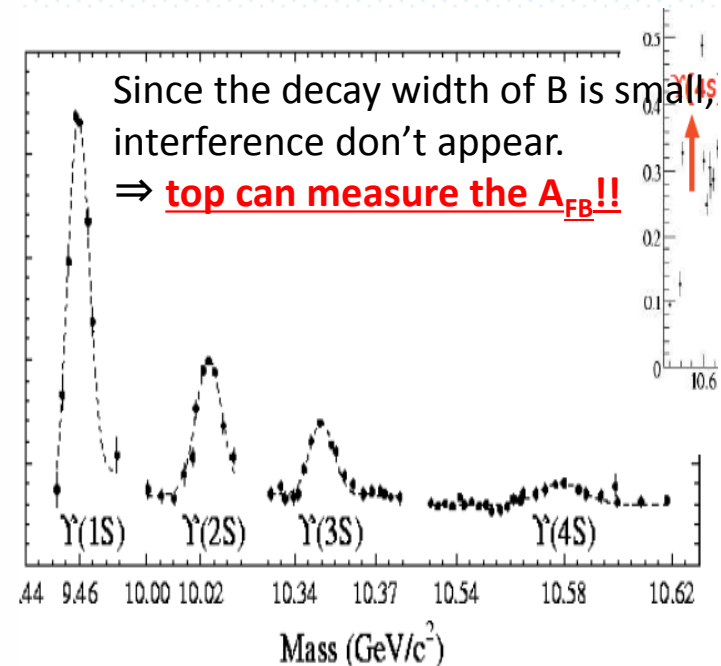
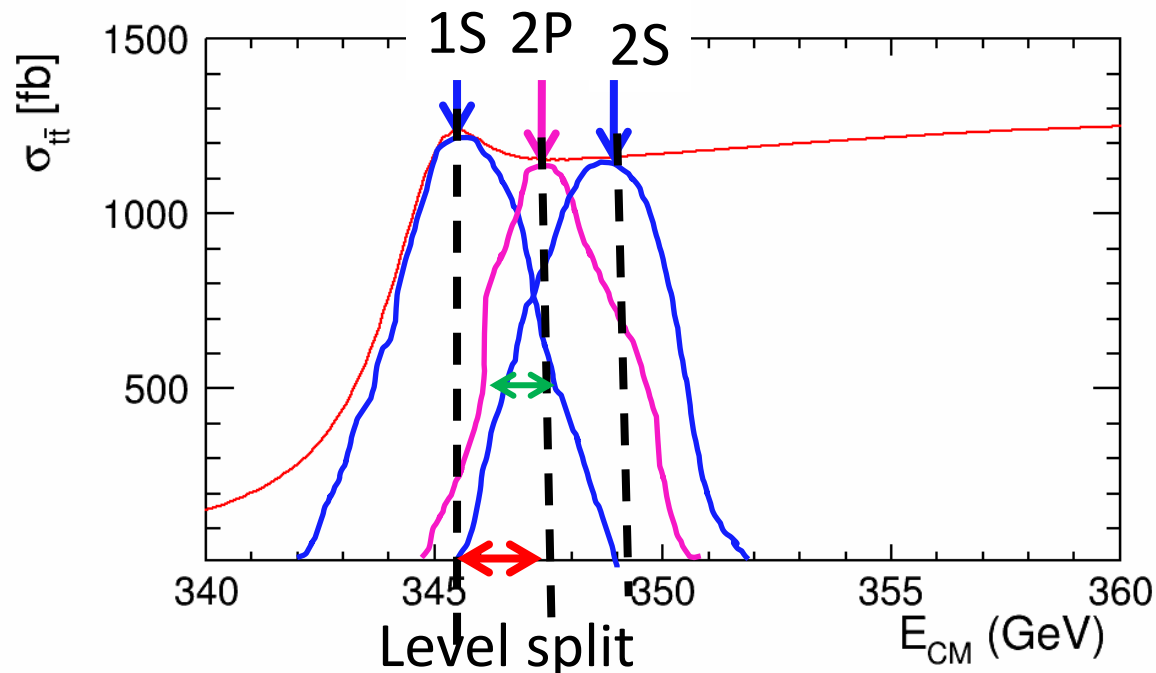
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New Analysis Subject

Motivation for A_{FB}

- The main contribution of A_{FB} come from the interference of vector and axial-vector vertices.
 - Since top has large decay width, the interference with S- and P-wave is controlled by Γ_t
 - The level split which is separation with 1S- and 2P- resonance is depend on α_s .



Analysis

$$A_{FB} = \frac{N_{\cos \theta > 0} - N_{\cos \theta < 0}}{N_{\cos \theta > 0} + N_{\cos \theta < 0}}$$

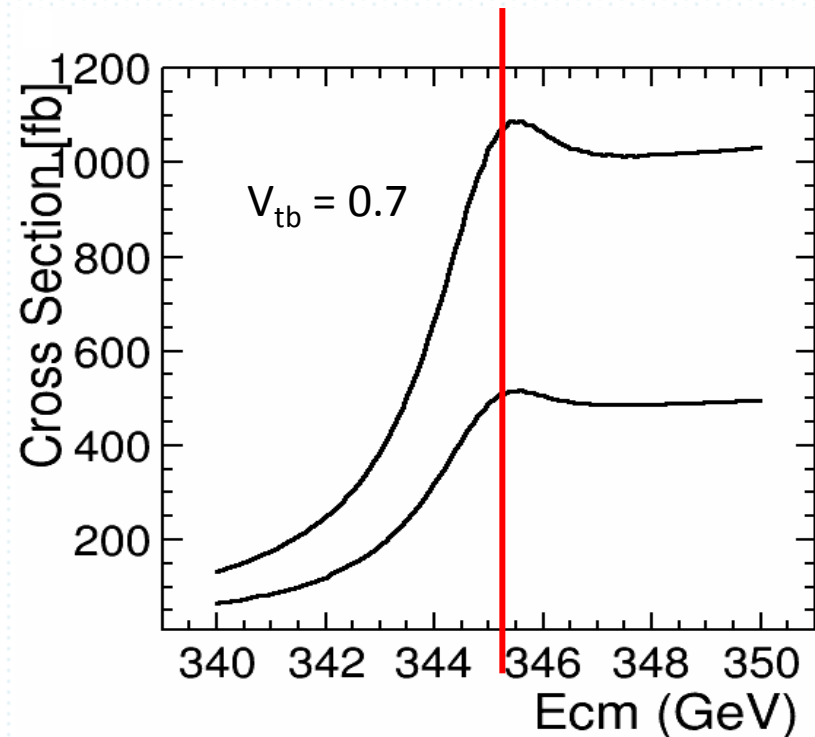
➤ Decaying mode

$tt \rightarrow bqqbl\nu$

- Pick up the isolated lepton
- Only use hadronic decayed top quark

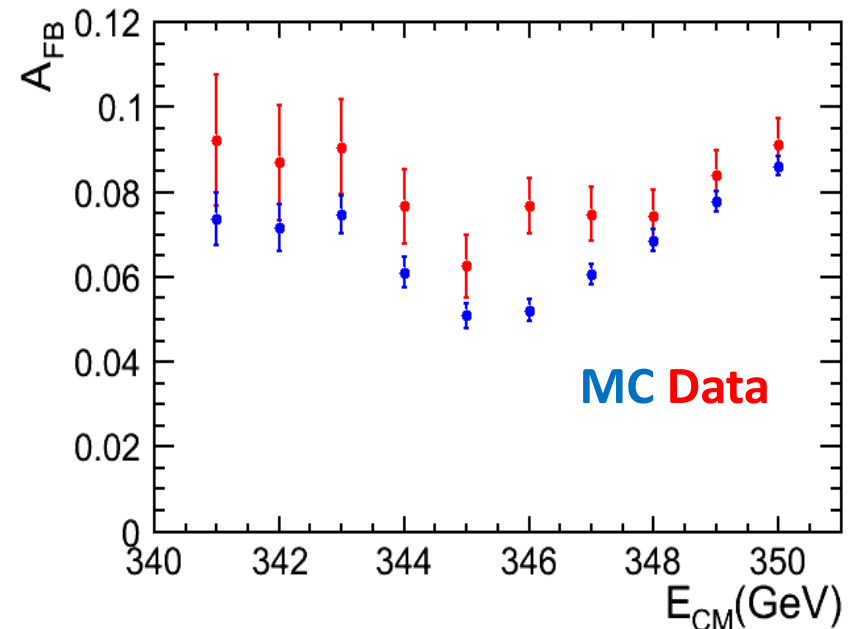
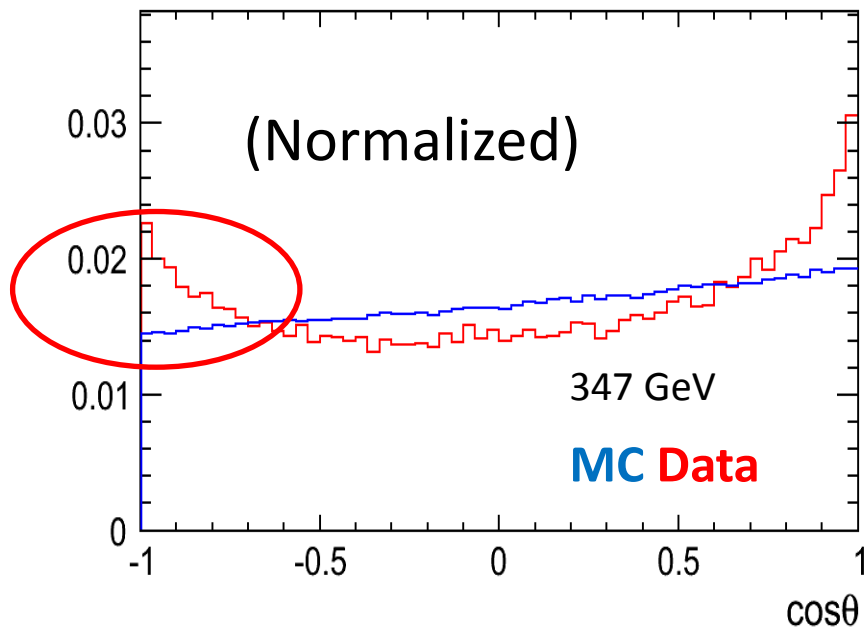
➤ Where is 1S peak ?

- make top width smaller.
- Since $\Gamma_t \sim 1.5$ GeV, accumulated energy point is near 347 GeV.



Status

- Reject the bkg. overlay strongly
 - optimizing anti-Kt algorithm cut
 - On low and high $\cos\theta$ region, data is not linear although MC truth has linear distribution.



Plan

- Master's thesis
 - Check the theory
mass scheme, motivation for measurement, how
to calculation(ex.) what is the deference
between NNLO and NNLL.)
- A_{FB}
 - Optimizing the anti-kt cut