

LCWS Oxford, March 22, 1999

$e^+e^- \rightarrow b\bar{b} \rightarrow b\bar{b}A$   
at a Future  $e^+e^-$  LC

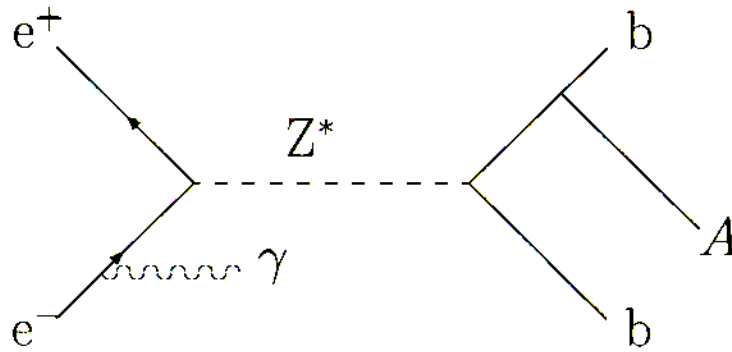
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## Basic Process



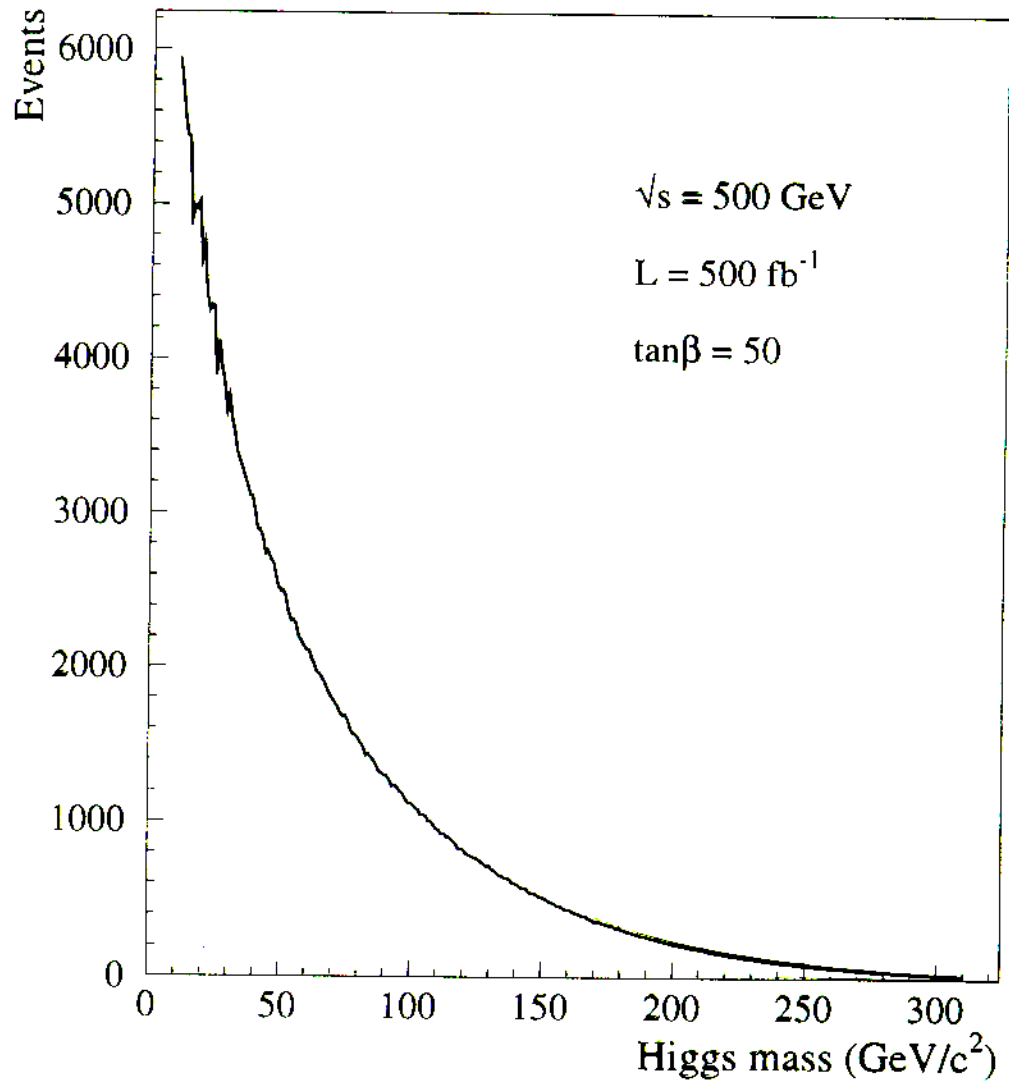
Idea: coupling  $b\bar{b}A$  is proportional to  $\tan \beta$ .

Can this process help to determine  $\tan \beta$ ?

Recall, generator based on matrix element calculation from

J.Kalinowski and M.Krawczyk.

$e^+e^- \rightarrow b\bar{b} \rightarrow b\bar{b}A$  **Rate**



## Event Pre-Selection

Channel (in 1000)	bbA	qq	WW	eW $\nu$	tt	ZZ	eeZ	sum
After Preselection	72%	11069	7481	0	89983	10278	145	118957

$$B\text{-tag}(3^{\text{rd}} \text{ jet}) > 2$$

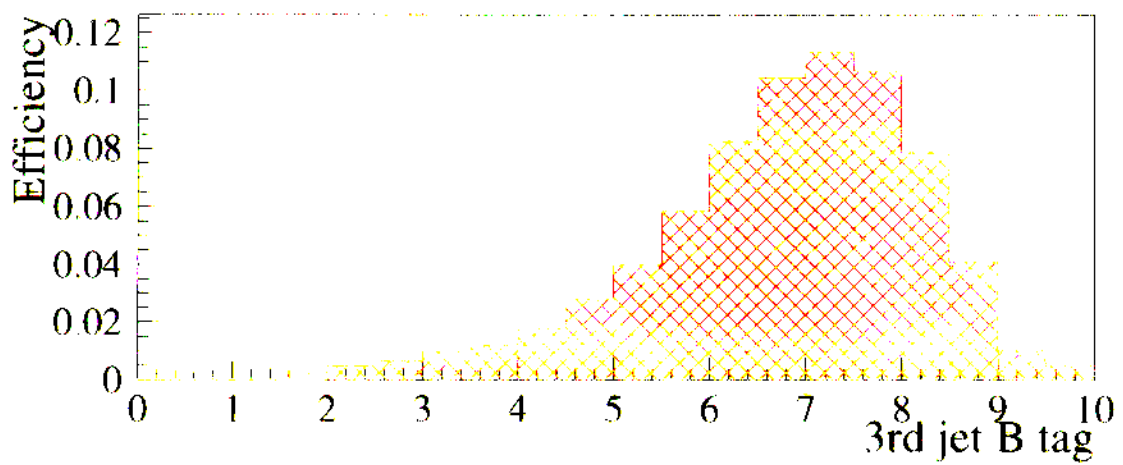
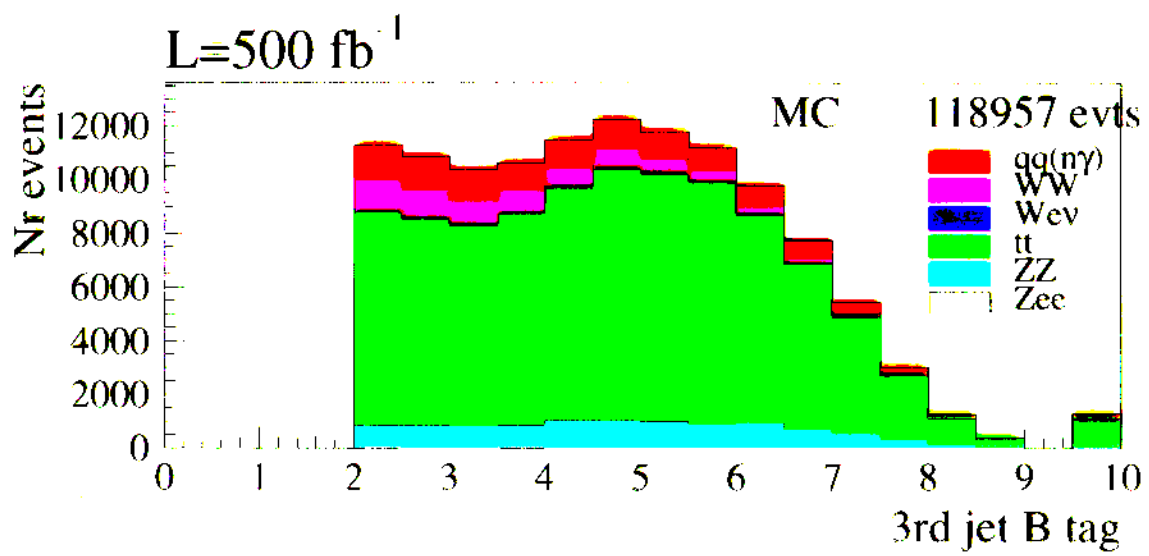
$$N_{\text{el}} > 17$$

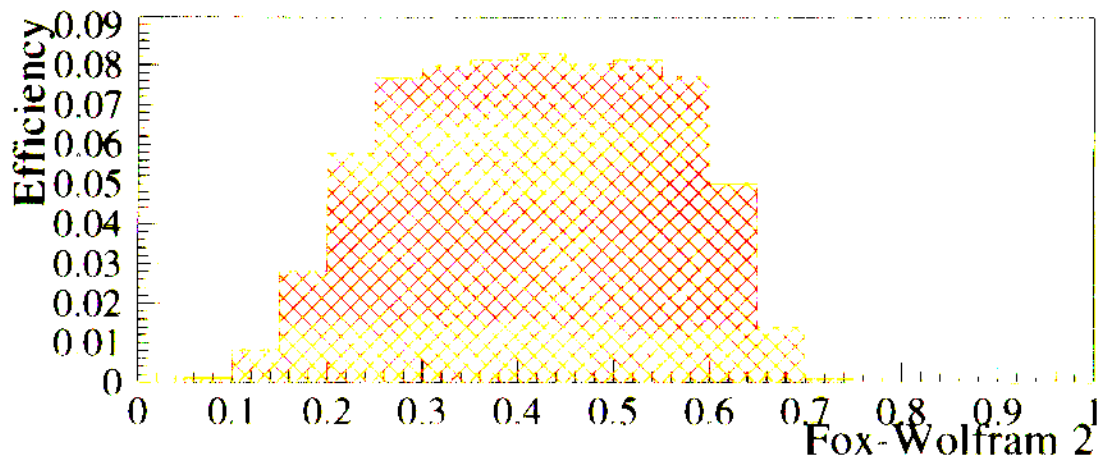
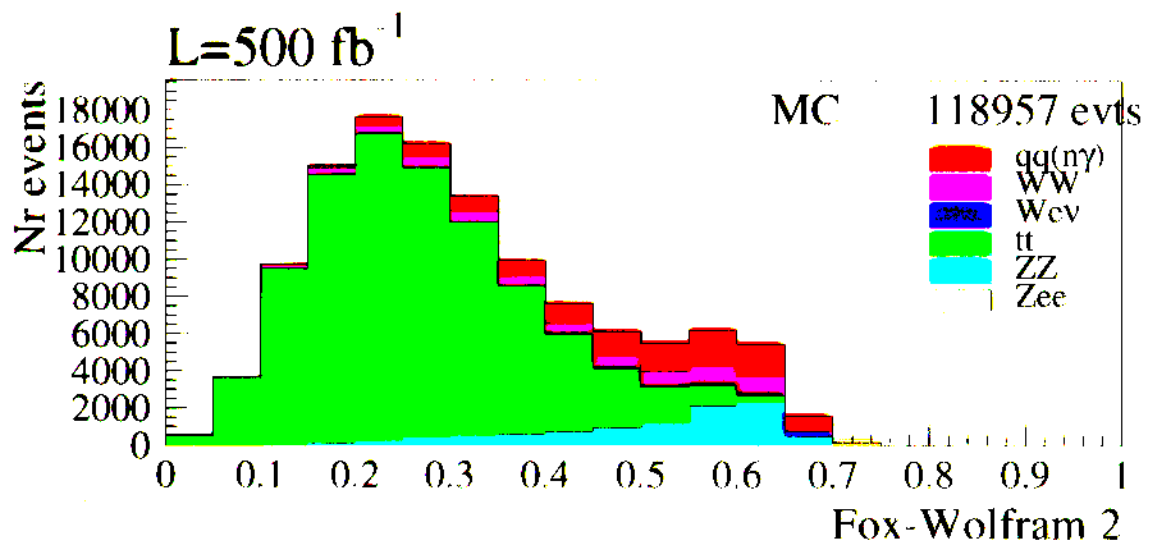
$$E_{\text{el-magn}} < 0.5 \sqrt{s}$$

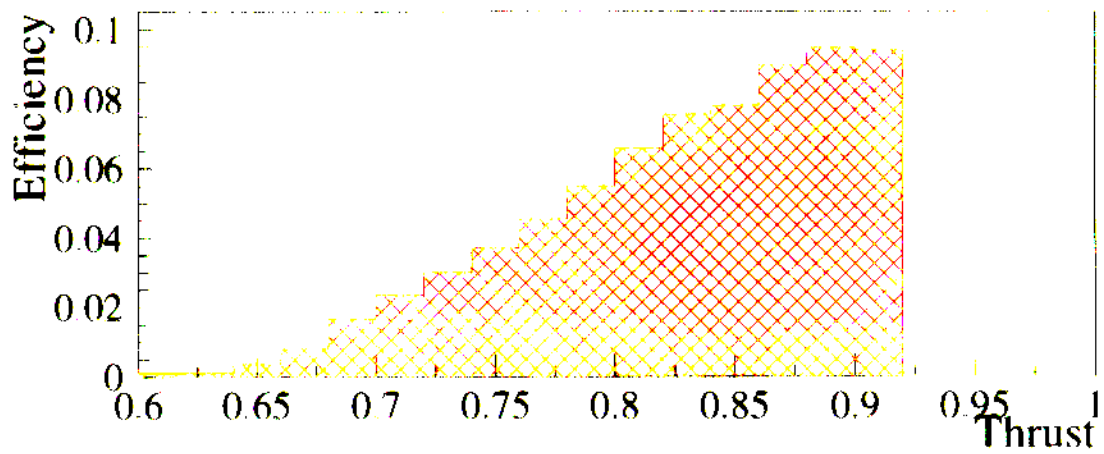
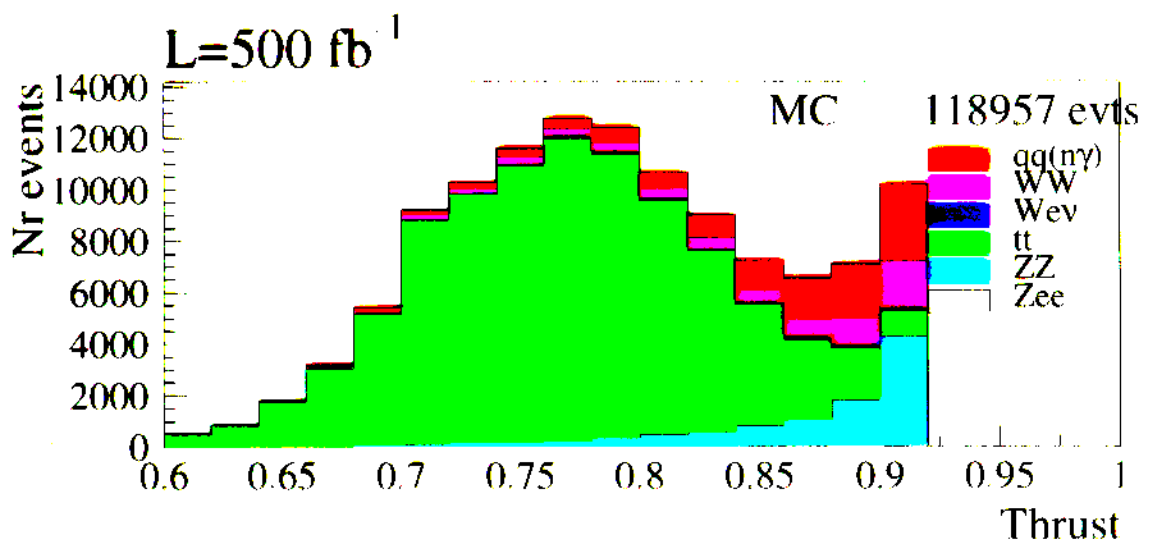
$$E > 0.6 \sqrt{s}$$

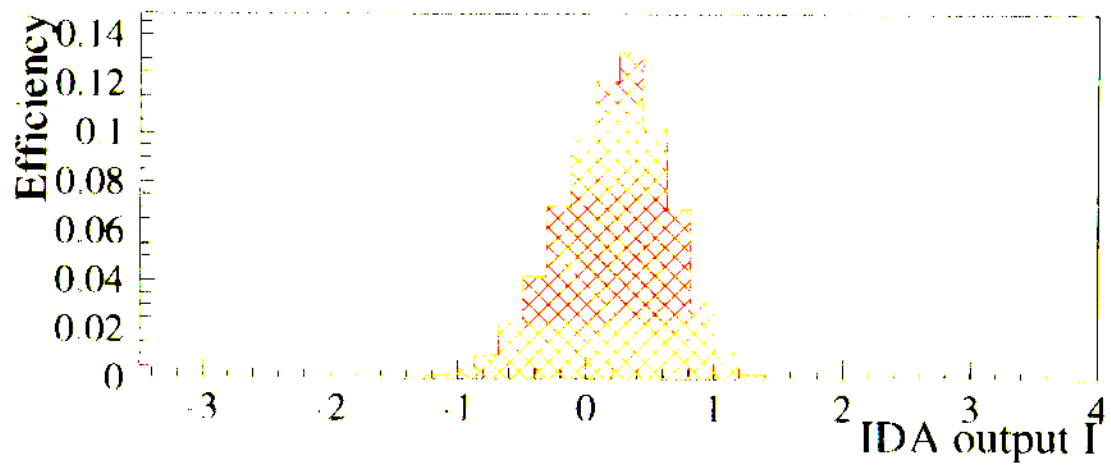
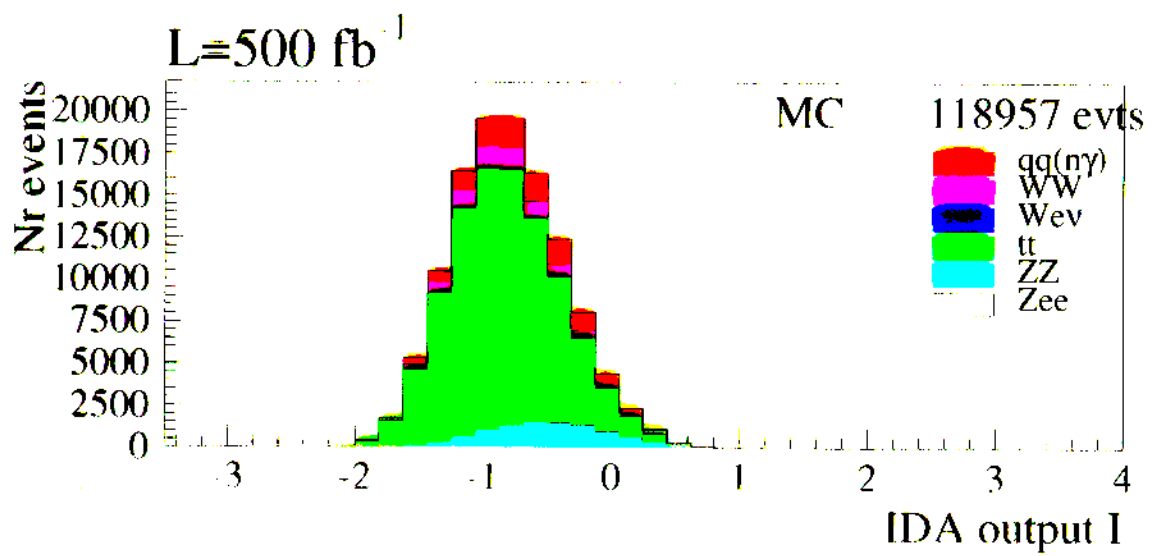
$$E_{\text{iso}} < 30 \text{ GeV}$$

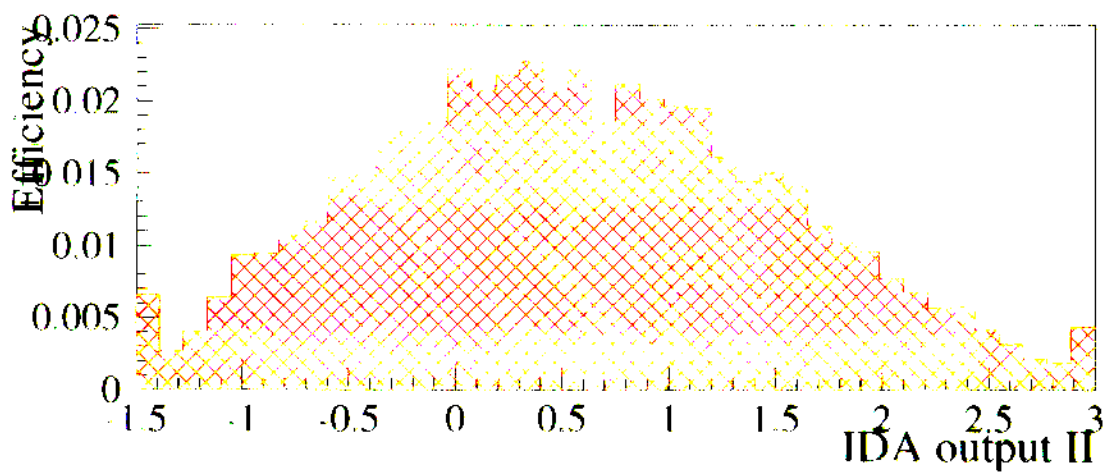
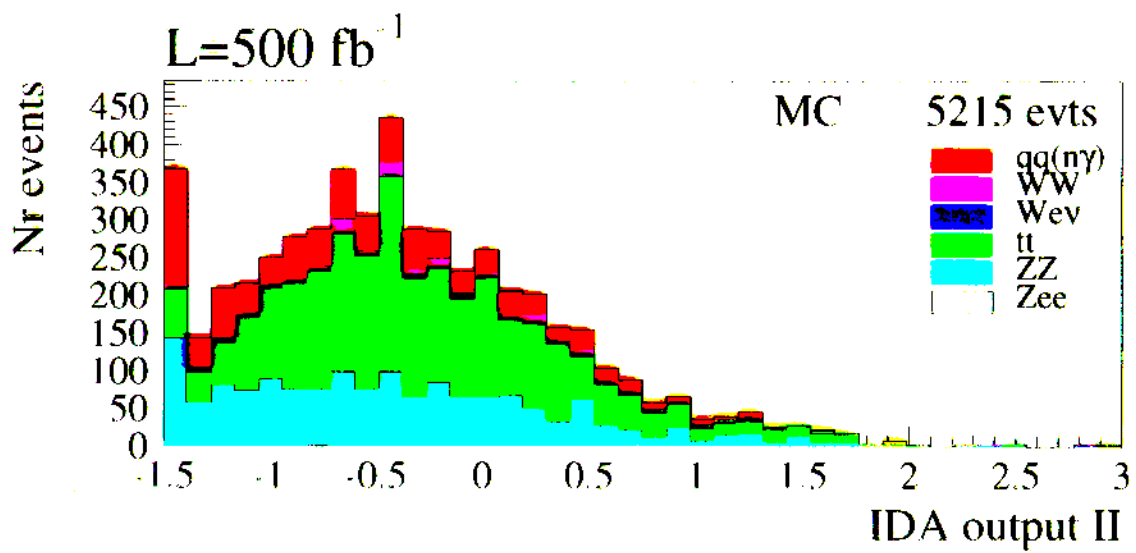
$$\text{Thrust} < 0.92$$

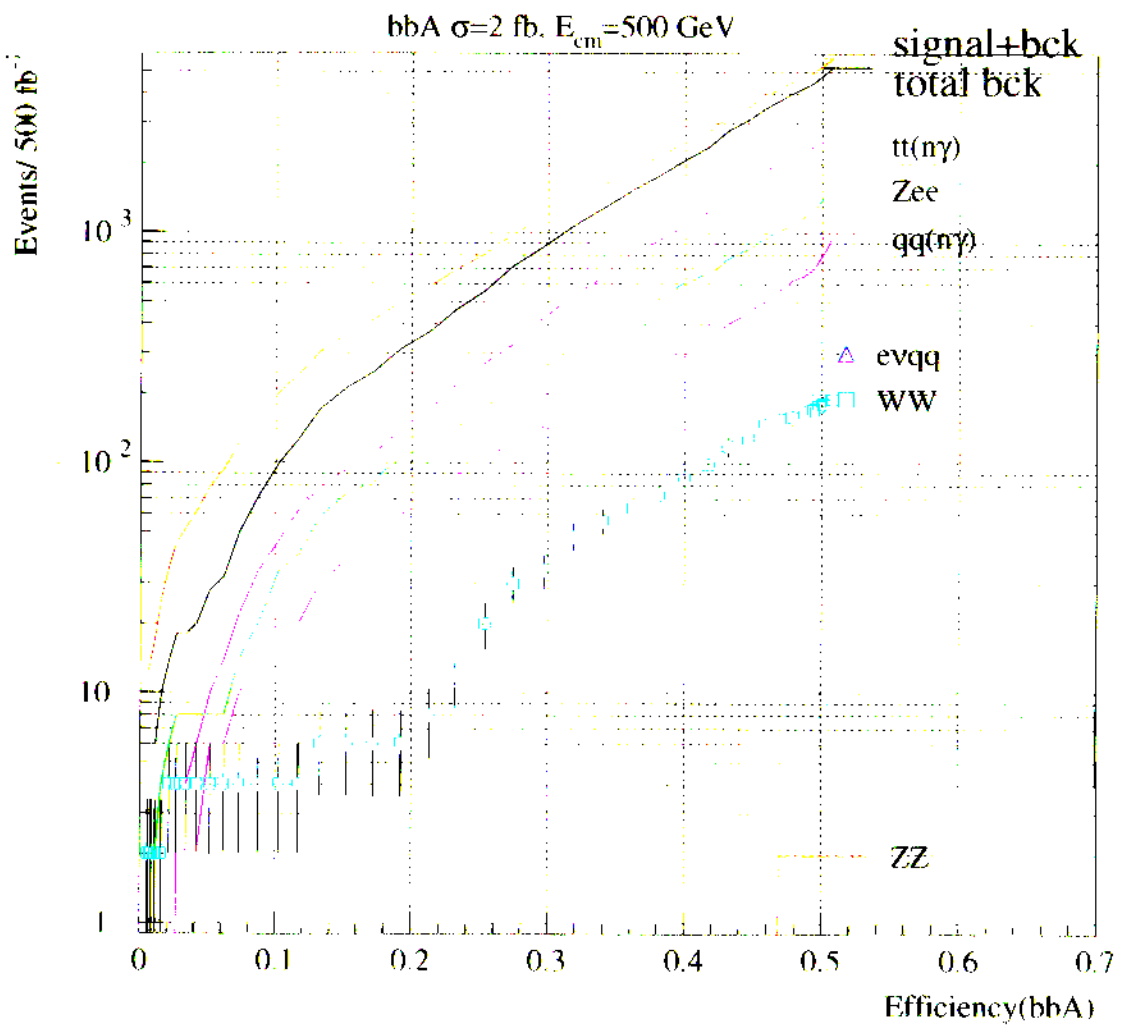












## Results and Conclusions

- 500 fb<sup>-1</sup> simulated: 16 mio events.
- A signal of bbA will be visible:  
100 signal and over 100 background events
- $\Delta \text{tg}^2\beta / \text{tg}^2\beta = \Delta N_s / N_s = 0.15$