# $M_{t\bar{t}}$ Distribution

A measurement of $dN/dM_{t\bar{t}}$ can test for extension to the Standard Model. Physics beyond the SM can change the shape of the distribution. One example would be a resonance,

$$p\bar{p} \rightarrow X \rightarrow t\bar{t}$$

- When calculating $M_{t\bar{t}}$, constraining to the measured top mass can improve the resolution of $M_{t\bar{t}}$ by a factor of 2.
- Some models predict a large coupling to $t\bar{t}$ and so the top channel would be the primary channel for discovery.