

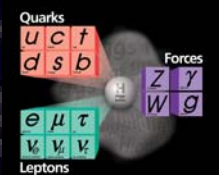
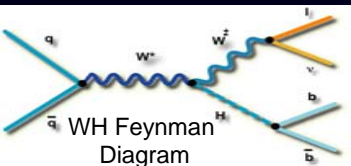
# Where is the Higgs Hiding?

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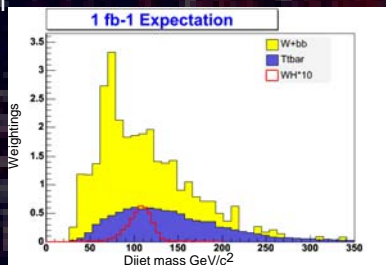


**Tevatron:** Accelerating protons and anti-protons to approximately 2 TeV

## Where is WH?



- Higgs is the only undiscovered particle in the Standard Model
- One Mechanism for Higgs Production at the Tevatron



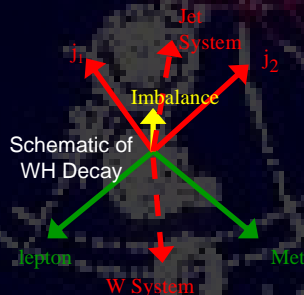
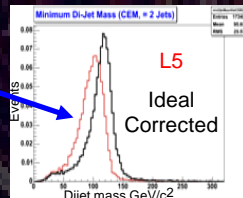
## Problems

- Large Background
- Small Cross-section

## How to make Improvements?

$$\text{Resolution} = \frac{\sigma}{\mu}$$

Want to sharpen this peak by improving the measurement of the neutrino

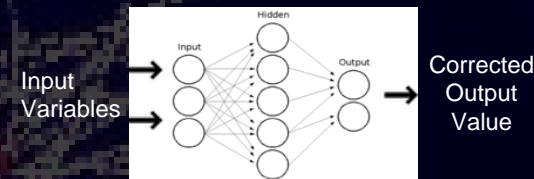


- Every one percent improvement in resolution leads to a 10% increase in sensitivity
- This analysis aims for an improvement of at least a 2-3%.
- This analysis may require improvement in the measurement of the missing energy from the neutrino

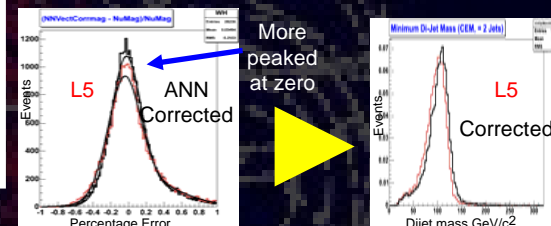
## Tools and Results

### Artificial Neural Network

- Advanced analysis technique
- Based on the human brain's ability to recognize patterns
- Varies weights in a series of tests called training to improve the  $E_t$



Improving the MET measurement to correct the jet measurement



## Future?

- Use track met variables to try to eliminate some fake MET from events
- Develop cuts to eliminate events with poorly measured MET
- Examine these cuts on previously eliminated signal regions

