

TOP QUARK: SEMILEPTONIC CHANNEL

THE SAGA CONTINUES

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18-07-12

REMINDER: WHERE I WAS LAST TIME

- Learning ROOT and C++: not as easy as I hoped
- Quality of Twiki documentation: more variable than costumes at the Lake Parade
- Had produced histogram of top mass using very basic kinematic-cut based analysis
- Advisor (Stephanie) going away for a month

EFFICIENCY VS. PURITY

- Purity: cuts should eliminate most non-ttbar events
- Efficiency: cuts should keep most real ttbar events
- The constant tradeoff



- Solution: b-tagging
- Only keep events where two of the jets are marked as b-jets ($tt' \rightarrow Wb + Wb \rightarrow l\nu b + qq'b$)
- Greatly increases purity; hurts efficiency but not so badly as other cuts might
- Actual efficiency $\sim 10\%$ depending on exact cut values; advisor says this is about right



NEXT STEPS? KINEMATIC FITTER

- Measured values come with uncertainties, but also with theoretical values; e.g. the mass of the qq' jets should be equal to the W mass (80.4 GeV)
- Kinematic fitter adjusts the measured values (only within the uncertainty) to best fit the known constraints
- This is not cheating! Top mass CANNOT be one of the constraints since it is what we are trying to measure
- Furthermore the kinfitter records how much adjustment took place and associates a χ^2 for weighting/uncertainty purposes
- I am just starting on this phase (reading documentation, etc)

WHAT ELSE IS UP?

- Wore this funny hat in Bellegarde →→
- Amsterdam in like two hours, hope I don't miss your talk ☹️
- Zurich next weekend, Grindelwald???
- Found out I am leaving a day later than I thought, this happened on the way here too

