Bc -> J/ψ π at CDF with 1.1 fb^{-1} (approved result May 25 2006)

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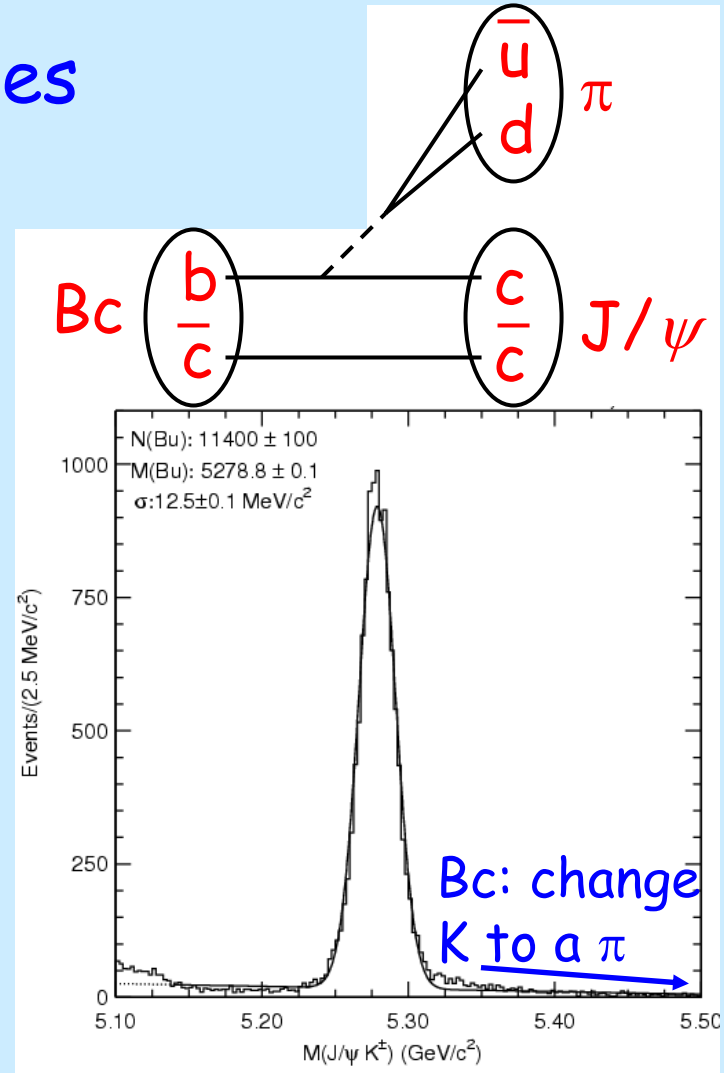
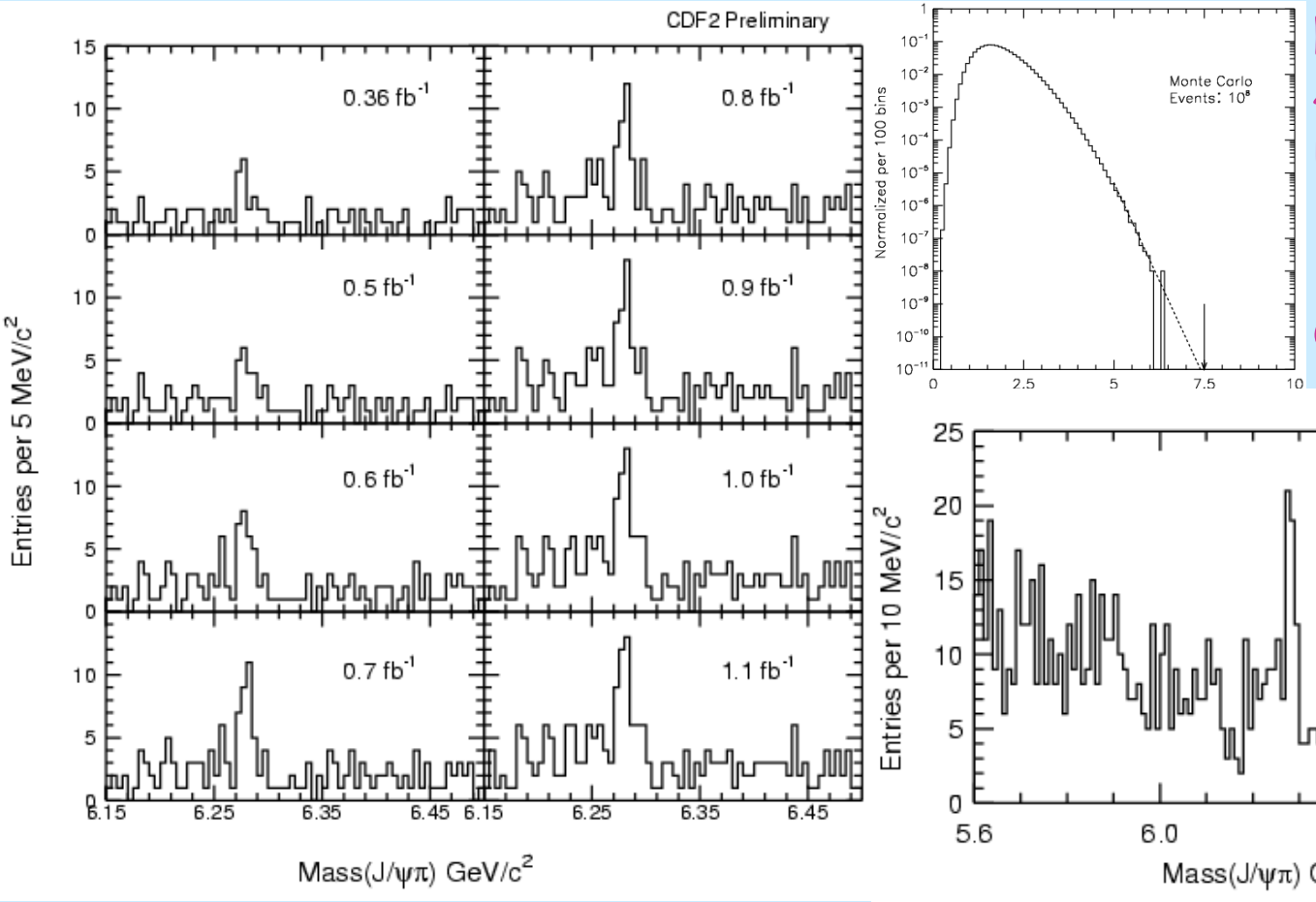
- Bc is not produced at B factories
- Full reconstruction allows for precise mass measurement
- New analysis
  - Tune selection on the data: Bu -> J/ψ K reference decay
  - After approval, "open box".
  - Wait for events to become a significant excess
  - Measure properties of the Bc



Bc -> J/ψπ



Num(events)$_{FIT}$= 44.4 sig 34.6 bkg between 6245-6305

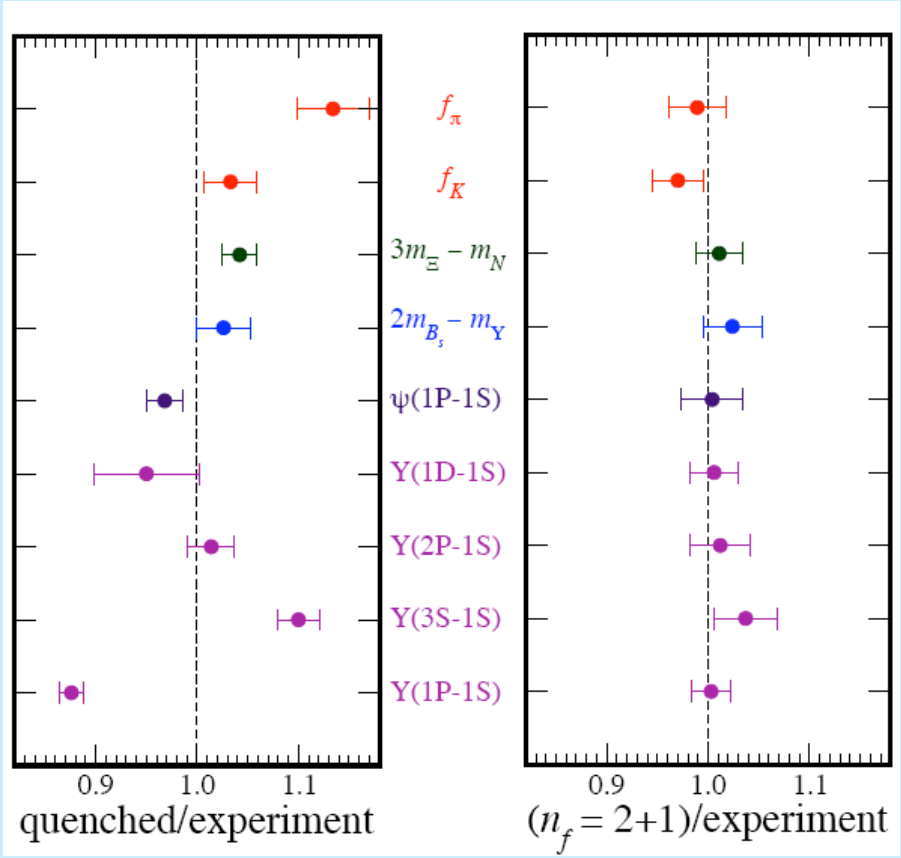
Significance > 6σ over search area

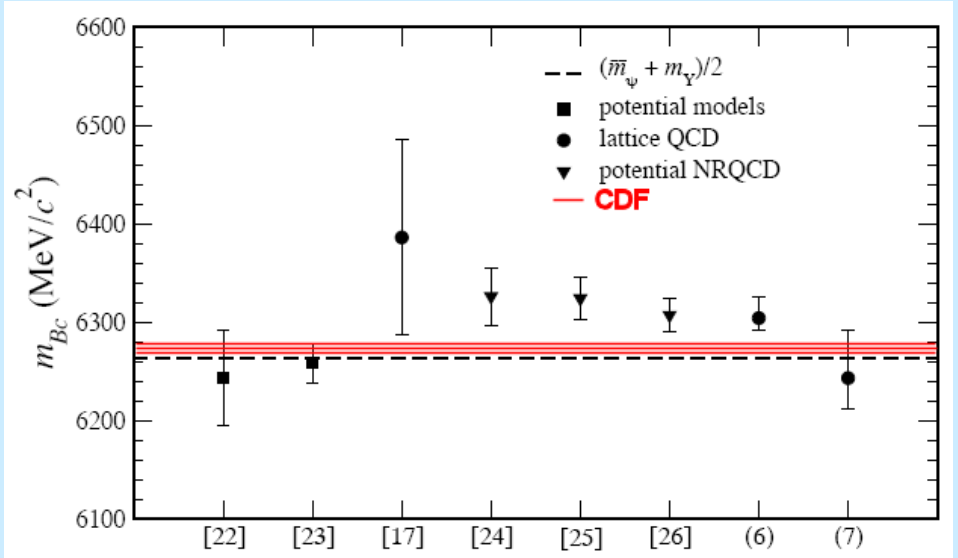
Mass(Bc) = 6276.5 +/- 4.0 +/- 2.7 MeV/c²

Best in world!

Recent Lattice Calculations

- Lattice calculations that show good agreement with experiment were used to *predict* the mass of the Bc





$M(Bc)_{CDF}$ = 6275.2 +/- 4.0 +/- 2.7 MeV/c^2

$M(Bc)_{LAT}$ = 6304 +/- 12^{+18}_{-0} MeV/c^2