

Quarkonia Polarisation for CDF-II

- Prompt ψ/ψ' polarisation
 - Current results
 - Scaling uncertainties for Run-II
 - Plans for Run-II
- $\Upsilon(1S)$ polarisation
 - Current results
 - Comments on evolution to Run-II

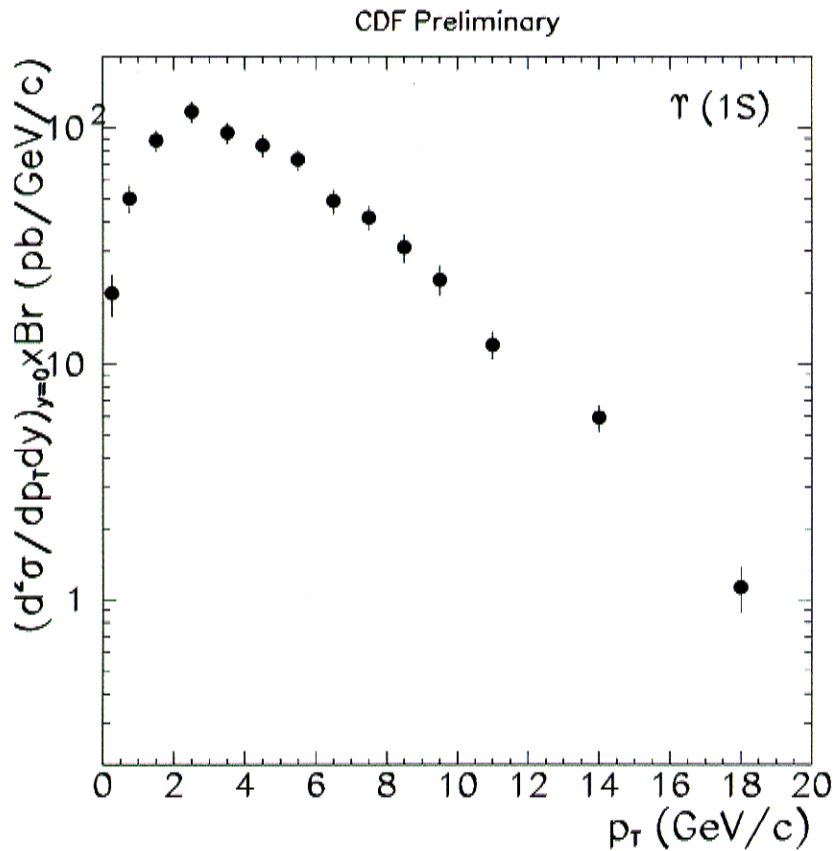
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Comments on Future of ψ polarisation

- Will trigger on all ψ mesons
 - Prompt
 - From B decay
- Not so clear whether we will continue to trigger on ψ'
- Is this really an incisive test of NR-QCD
 - Is the charm system massive enough?
 - Can we get to high enough p_t ?
 - Feed-down to ψ final states.
- ψ' triggers not currently planned.

$\Upsilon(1S)$ Polarisation Results from Run-I

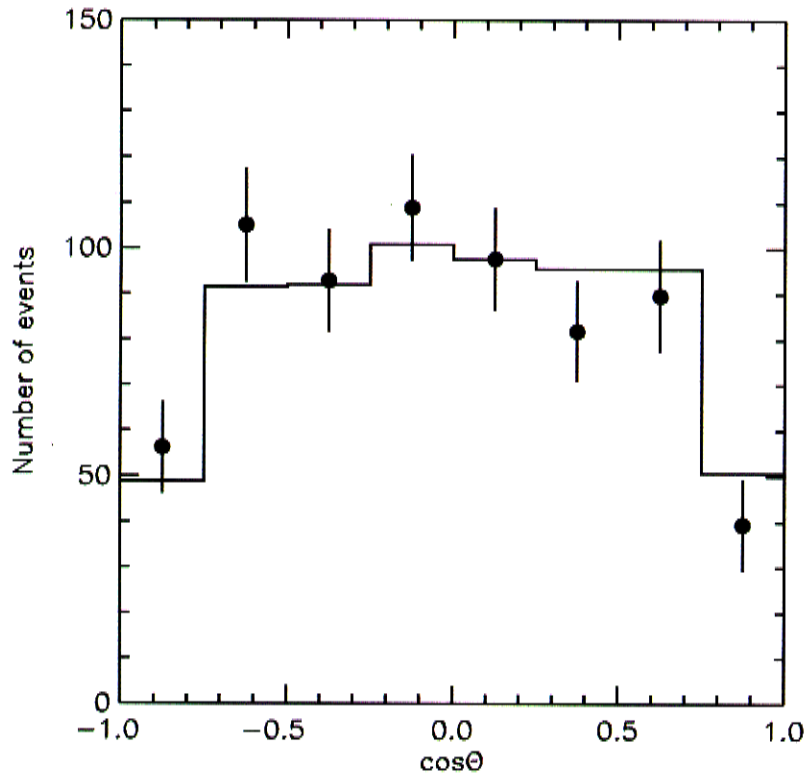
$\Upsilon(1S)$ differential cross-section from 110 pb^{-1}



- 700 candidates above p_t of 8 GeV/c
- 40 events above p_t of 16 GeV/c

Predictions for $\Upsilon(1S)$ in Run-II

This angular distribution fit for $p_t \geq 8$ GeV/c



- Results in $\Gamma_L/\Gamma = 0.32 \pm 0.11$
- Could have similar number of candidates with $16 \leq p_t \leq 20$ GeV/c
- Will this be incisive?
 - Does this give $p_t \geq m_\Upsilon$?
- Υ triggers not currently planned
 - ↳ PROBABLY EASIER TO GET INTO TRIGGER (CALIBRATIONS FOR m_w).

Summary

- Prompt ψ polarisation will improve
- Will need good arguments to pursue ψ' and Υ polarisation
- Could push out to slightly higher p_t
- How high would be high enough?
- Sham and Greg volunteer to writeup ≈ 2 pages with a couple of figures