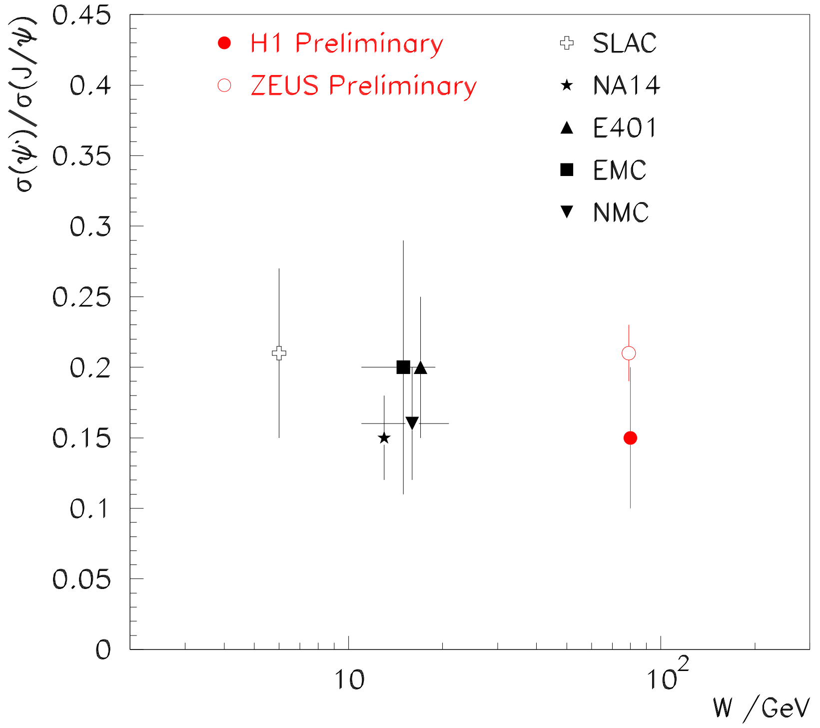
$\psi(2S)/\psi(1S)$ Cross Section Ratio

- Preliminary cross section (all 4 channels combined, H1)

$$\sigma(\gamma p \rightarrow \psi(2S)p) = (20 \pm 3 \pm 5)\text{nb} \quad \text{at } W_{\gamma p} = 80\,\text{GeV}$$

- Both ZEUS and H1 measured cross section ratio for quasi-elastic photoproduction of $\psi(2S)$ to $\psi(1S)$ mesons



▷ Measurements

$$\frac{\sigma(\psi(2S))}{\sigma(\psi(1S))} = \begin{cases} 0.15 \pm 0.05 & \text{H1 1994+1995 preliminary} \\ 0.21 \pm 0.02(stat) & \text{ZEUS 1995 preliminary} \end{cases}$$

▷ no significant change in $\psi(2S)$ to ψ cross section ratio w.r.t. low energy measurements

▷ ratio smaller than expected from VDM/Regge models ≈ 0.34

▷ ratio consistent with recent prediction by Kopeliovich etal. (0.17), based on colour dipole interaction