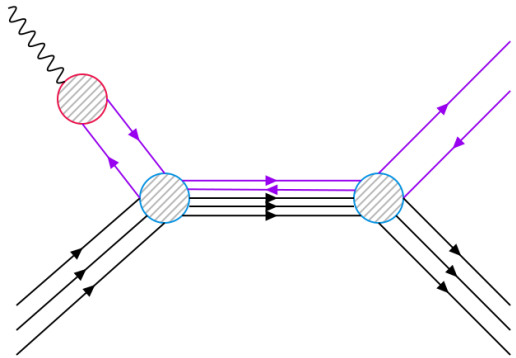
Phtotoproduction of LHCb Pentaquarks



$\sigma \sim BW(\Gamma_{Pc}, M_{Pc}) * BR(P_c \to \gamma p) * BR(P_c \to J/\psi p)$

$BR(Pc \to \gamma p) \sim \Gamma(J/\psi \to \ell^+\ell^-) * BR(P_c \to J/\psi p)$ (VMD)

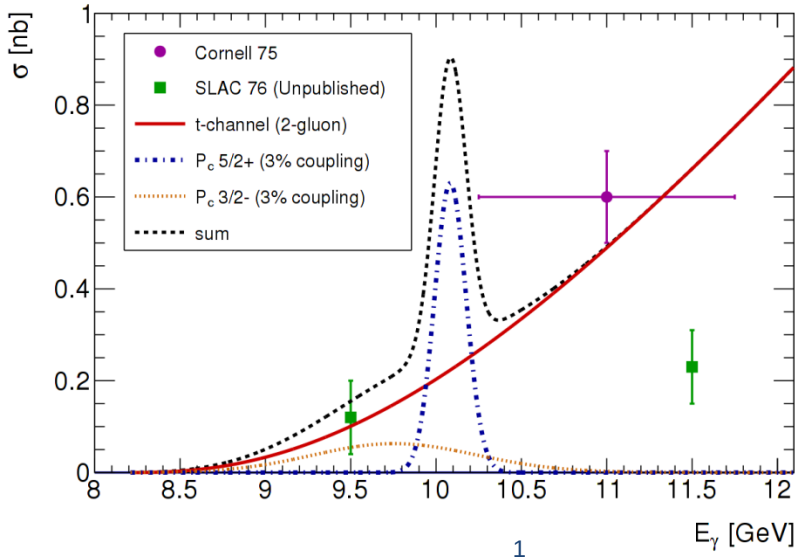
$\sigma \sim BR^2(P_c \to J/\psi p)$

1)V.Kubarovsky and M.B.Voloshin, arXiv: 1508.00888.
2)M.Karliner and J.Rosner, arXiv: 1508.01496.
3)A.Blin, C.Fernandez-Ramirez, A.Jackura, V.Mathieu, V.Mokeev, A.Pilloni, and A.Szczepaniak,arXiv: 1606.08912

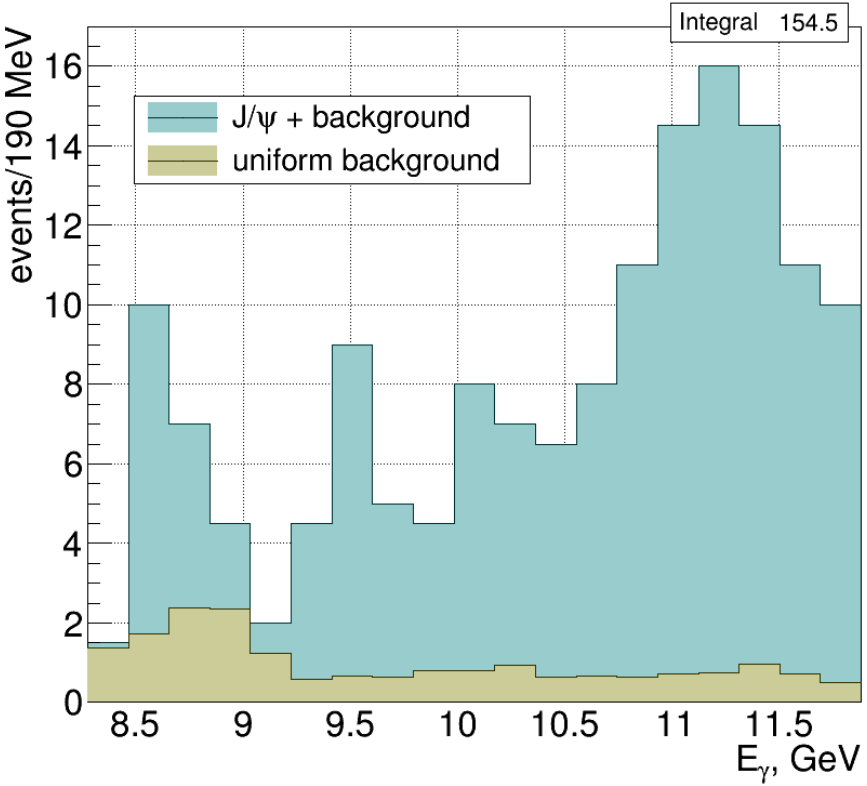
all three papers $\sigma^{max} \sim 10$ μb for $P_c(5/2+)$ 100% BR

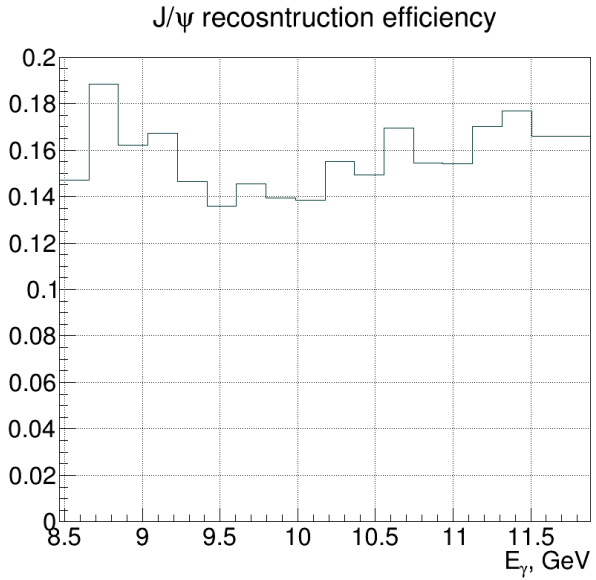
1)Q.Wang, X.Liu, and Q.Zhao,arXiv: 1508.00339

$\sigma^{max} \sim 0.7$ μb for $P_c(5/2+)$ 100% BR



J/ψ x-section in finer bins of beam energy





Upper limit for $BR(P_c \rightarrow p\, J/\psi)$