



Measuring exotic mesons at the EIC

Justin Stevens

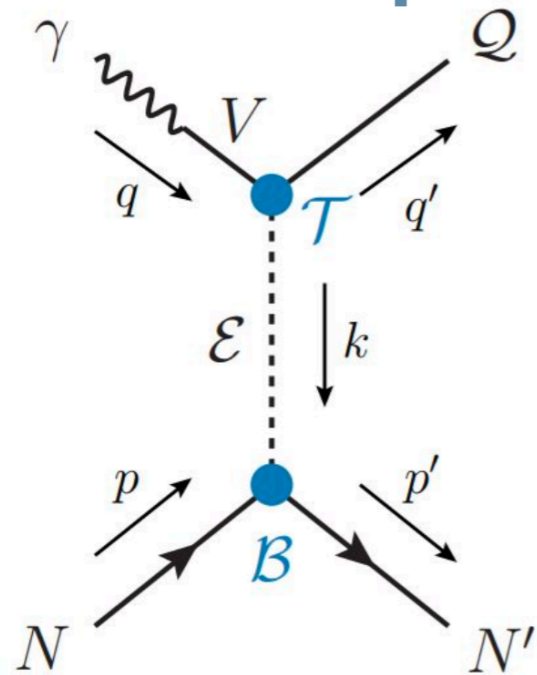


WILLIAM & MARY

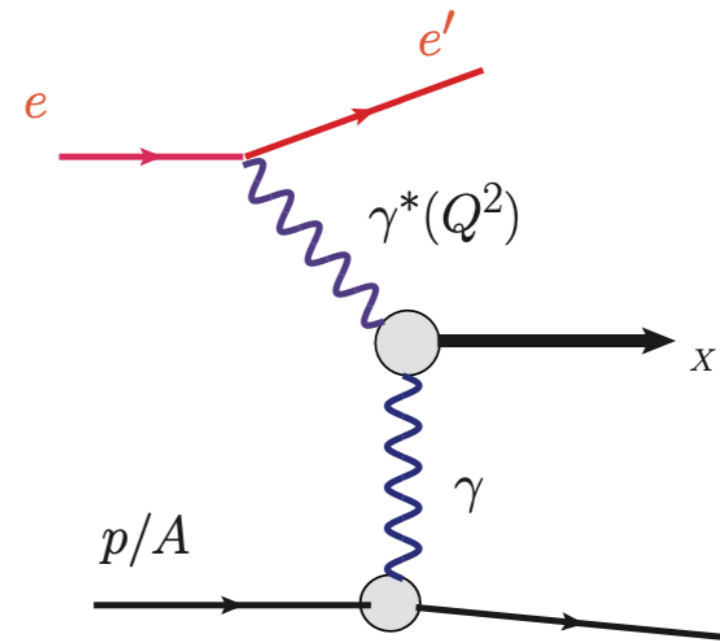
CHARTERED 1693

Unique production processes at EIC

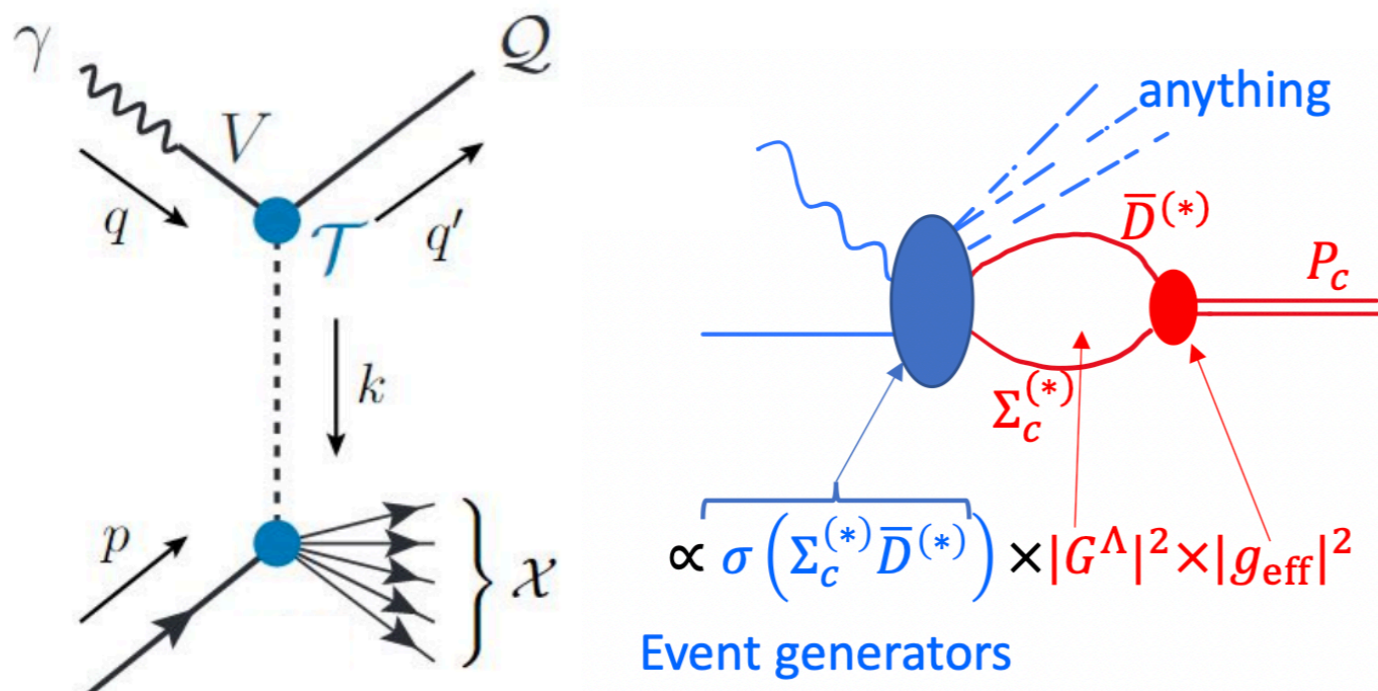
Exclusive Photoproduction



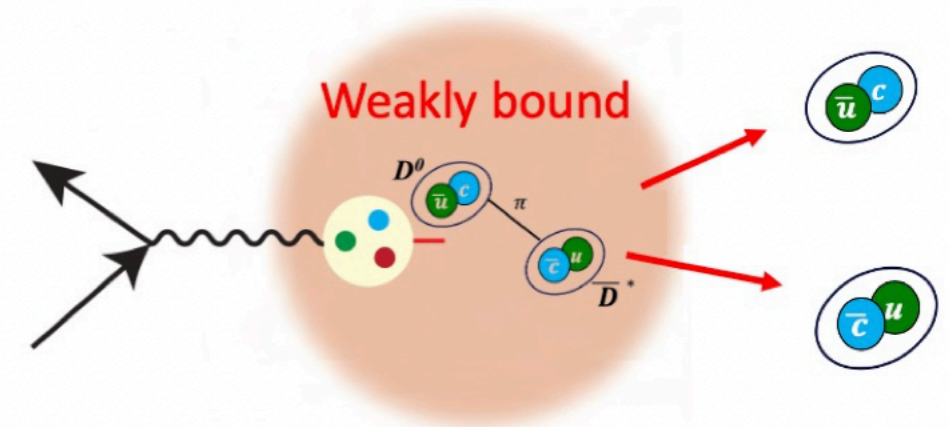
UPC: photon exchange



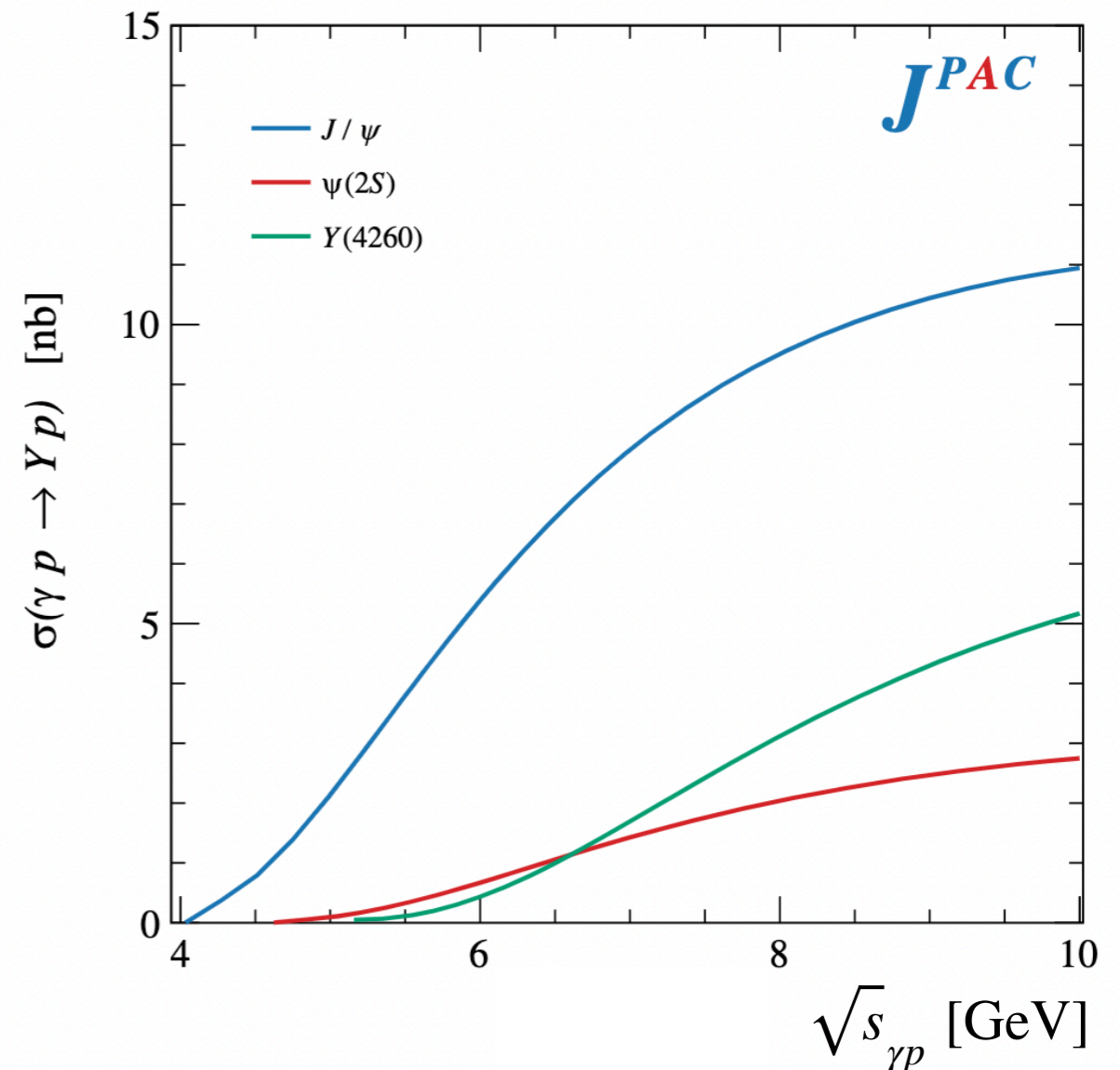
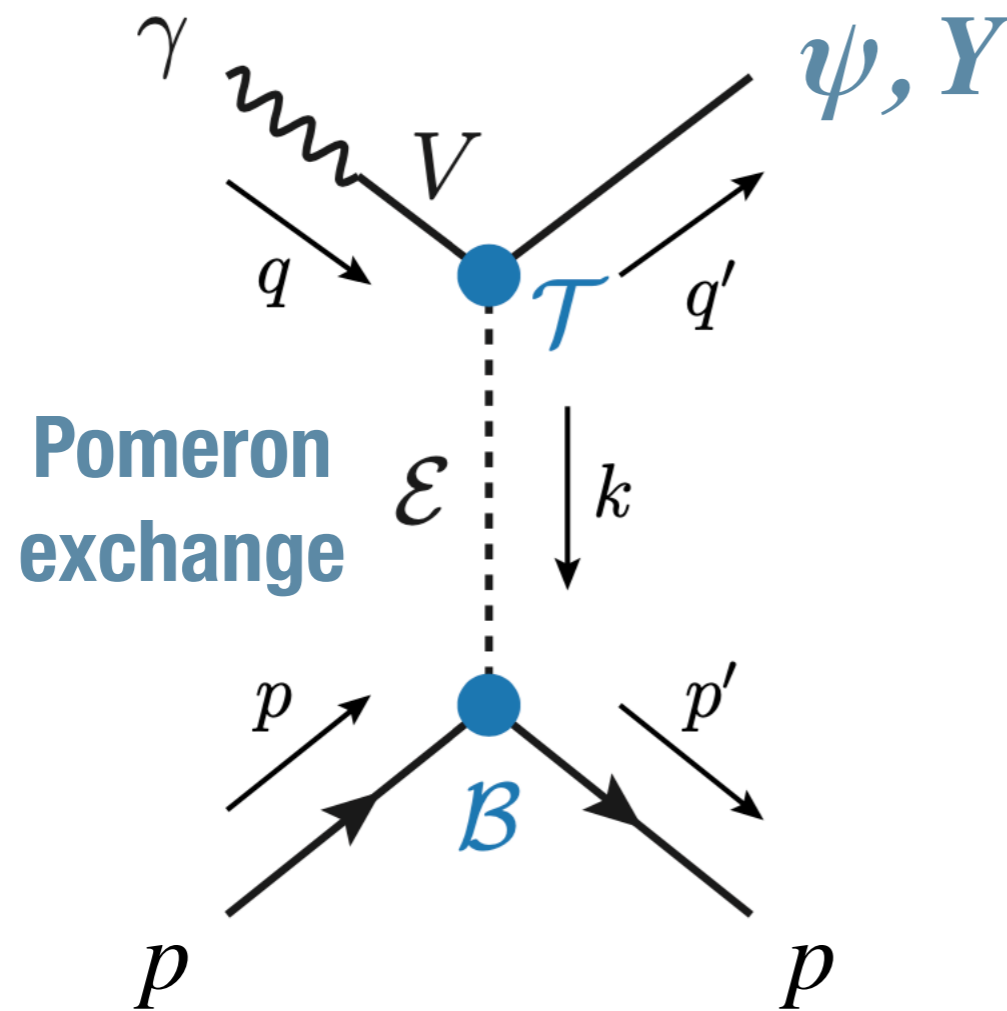
Semi-inclusive Photoproduction



In-medium



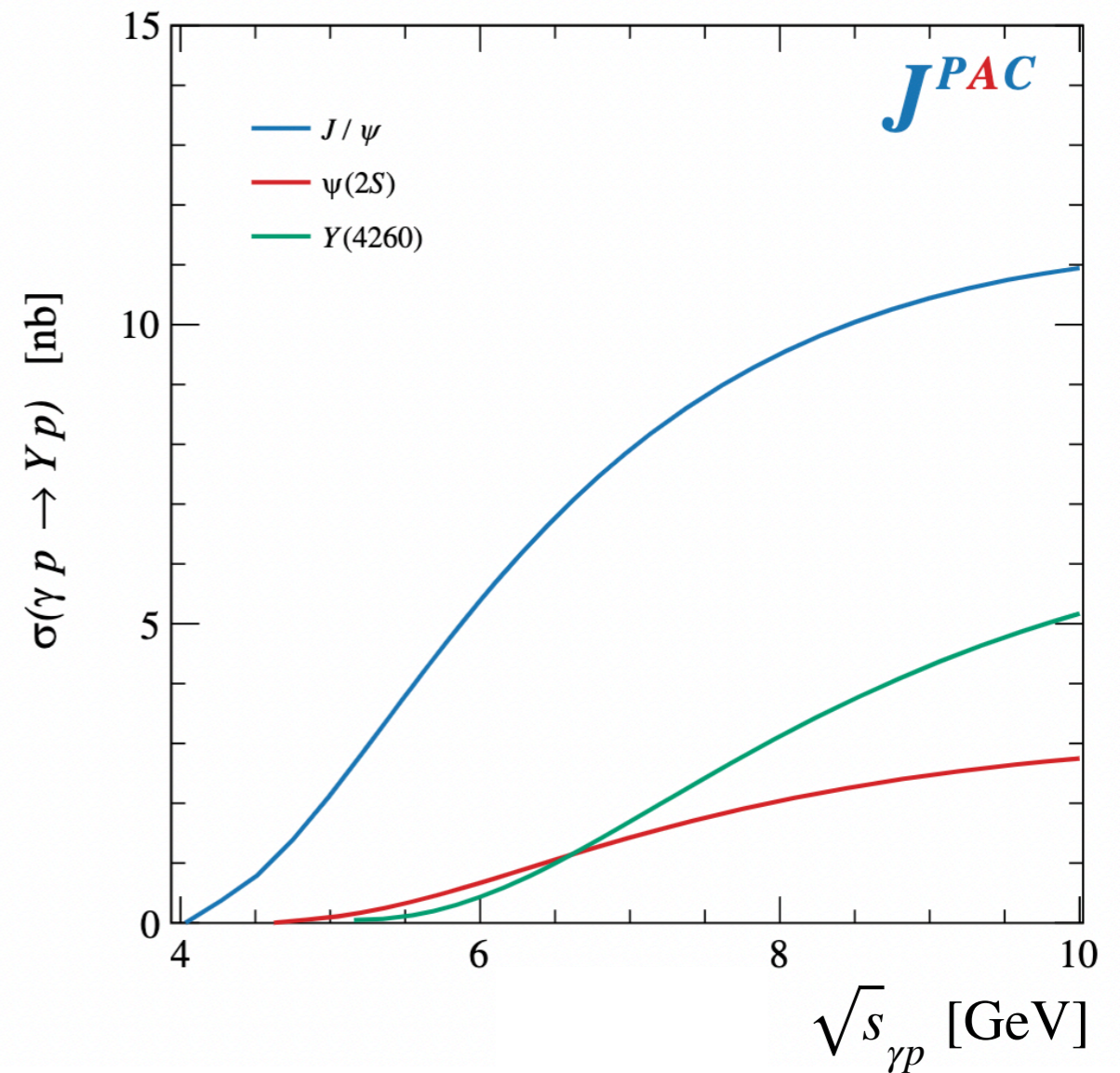
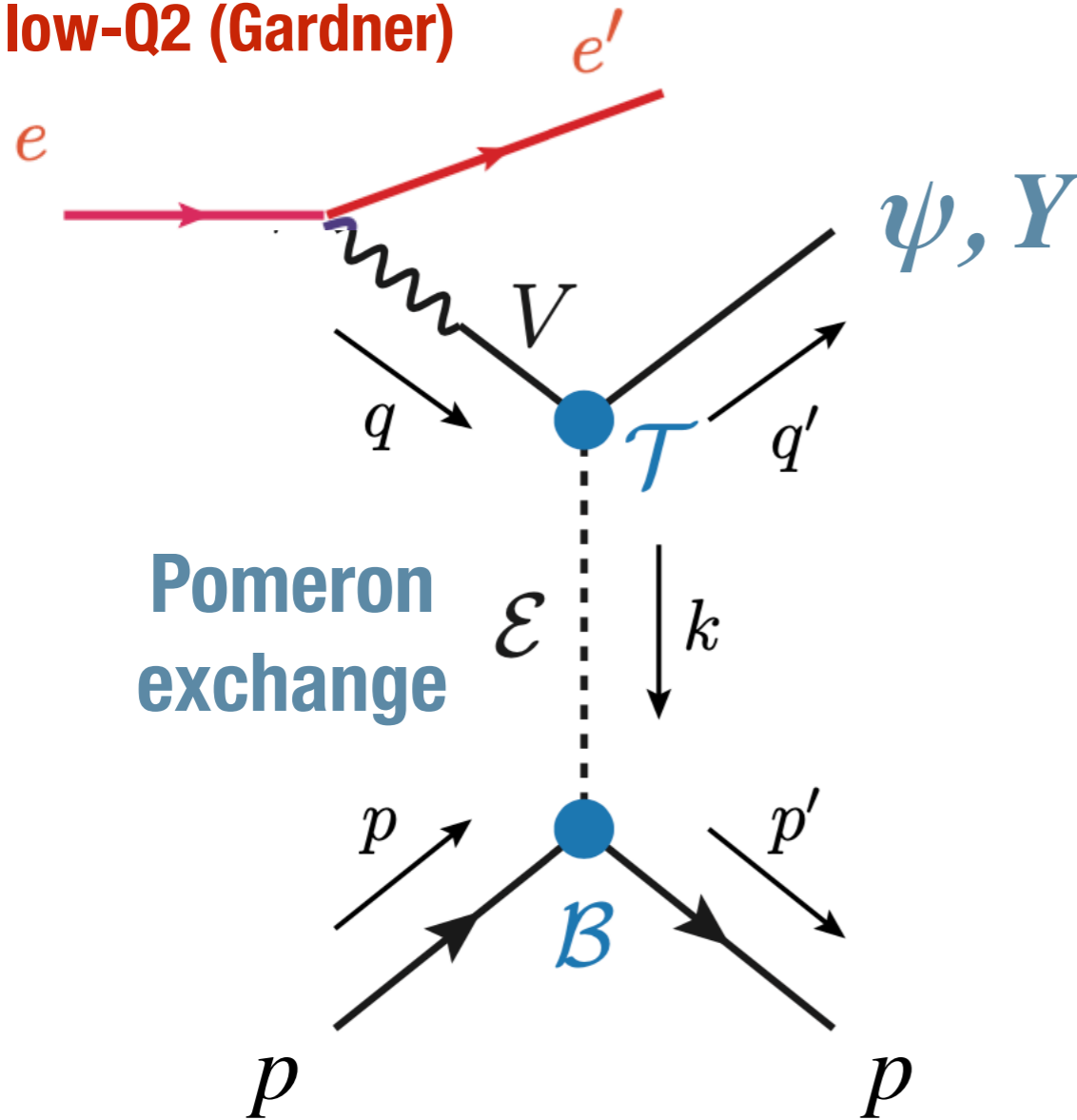
Exclusive photoproduction



Y states expected to be produced diffractively, increases with energy like other vectors

Exclusive photoproduction

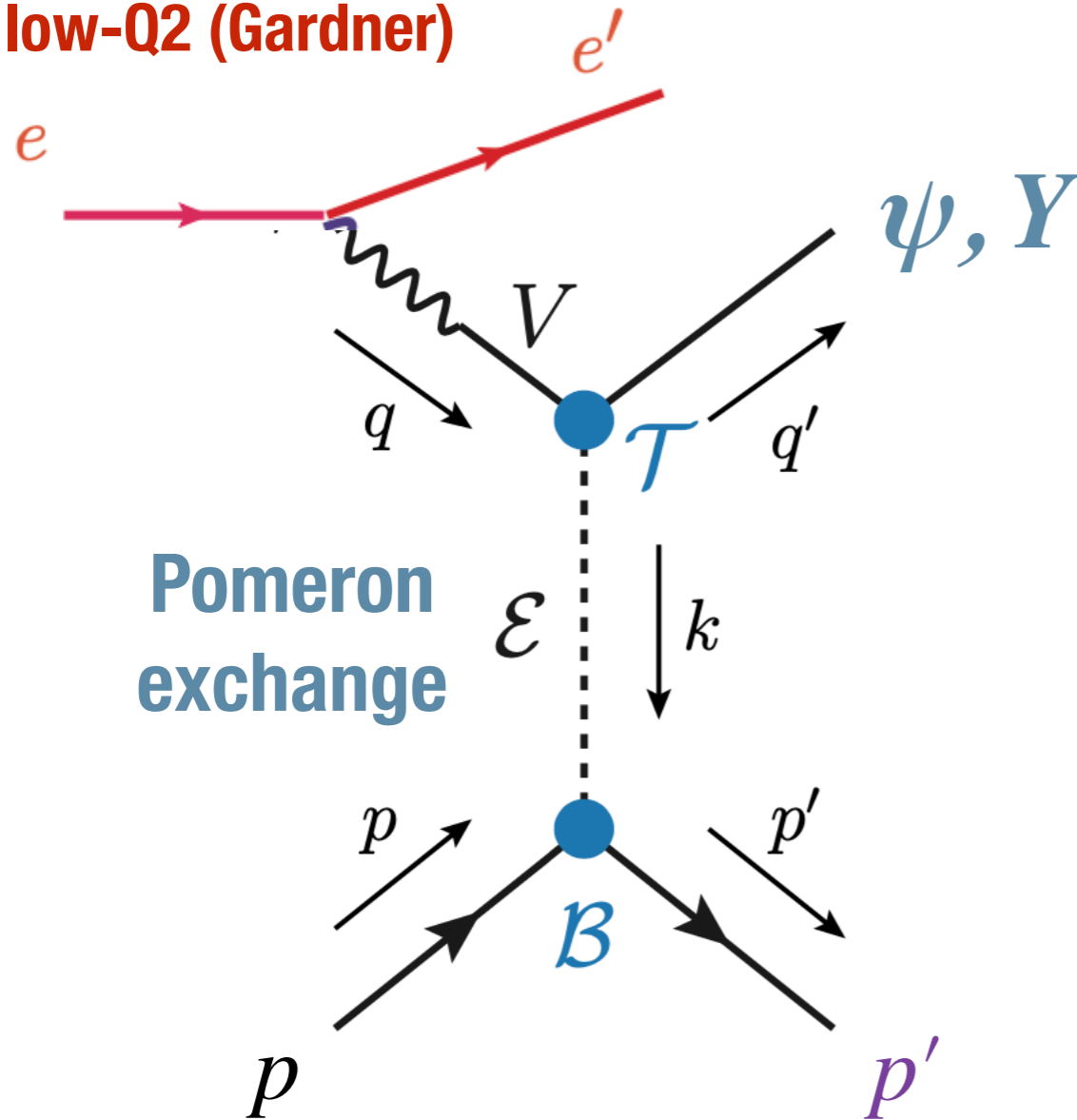
Tag scattered e-
low-Q² (Gardner)



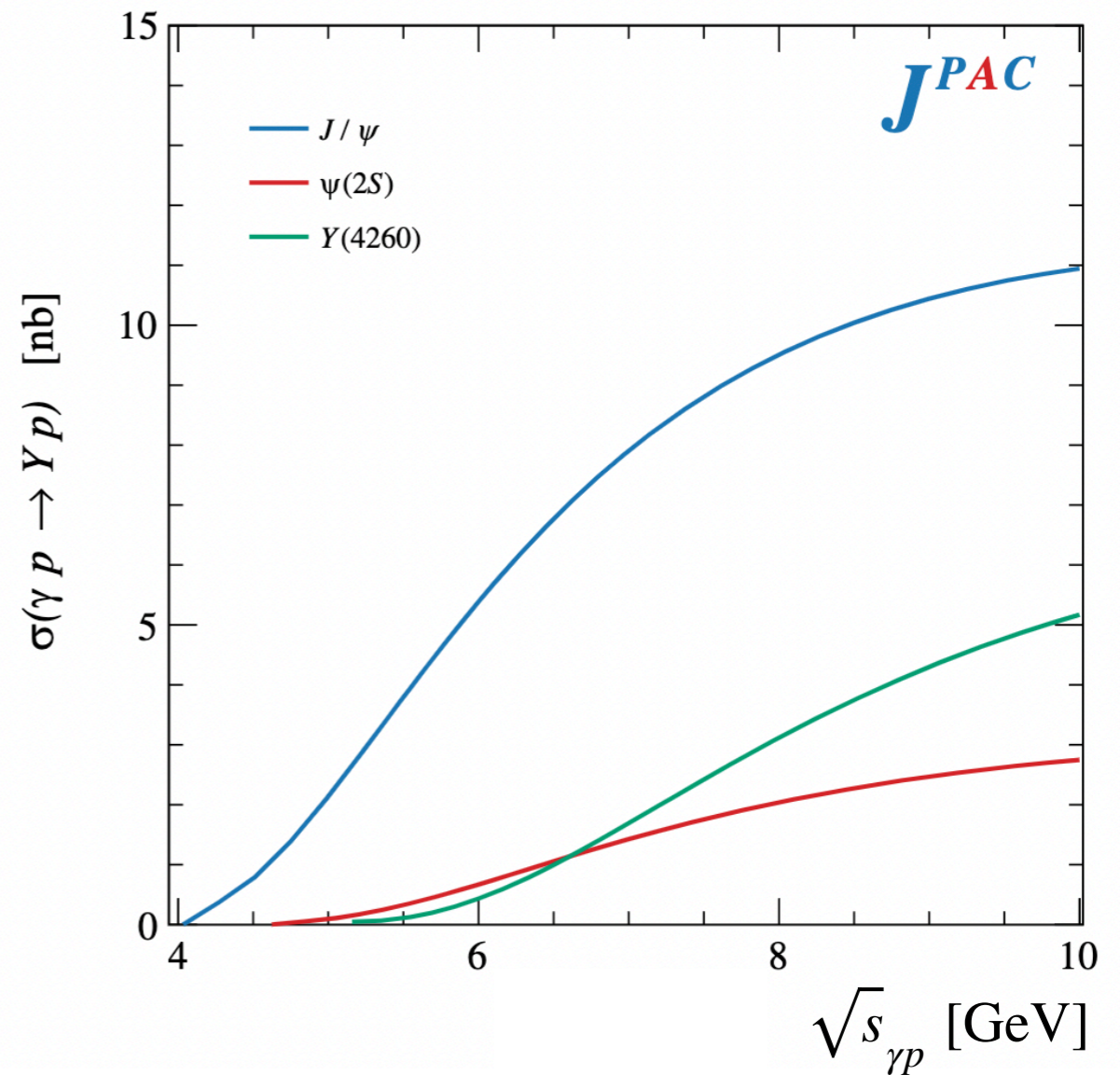
Y states expected to be produced diffractively, increases with energy like other vectors

Exclusive photoproduction

Tag scattered e-
low-Q2 (Gardner)



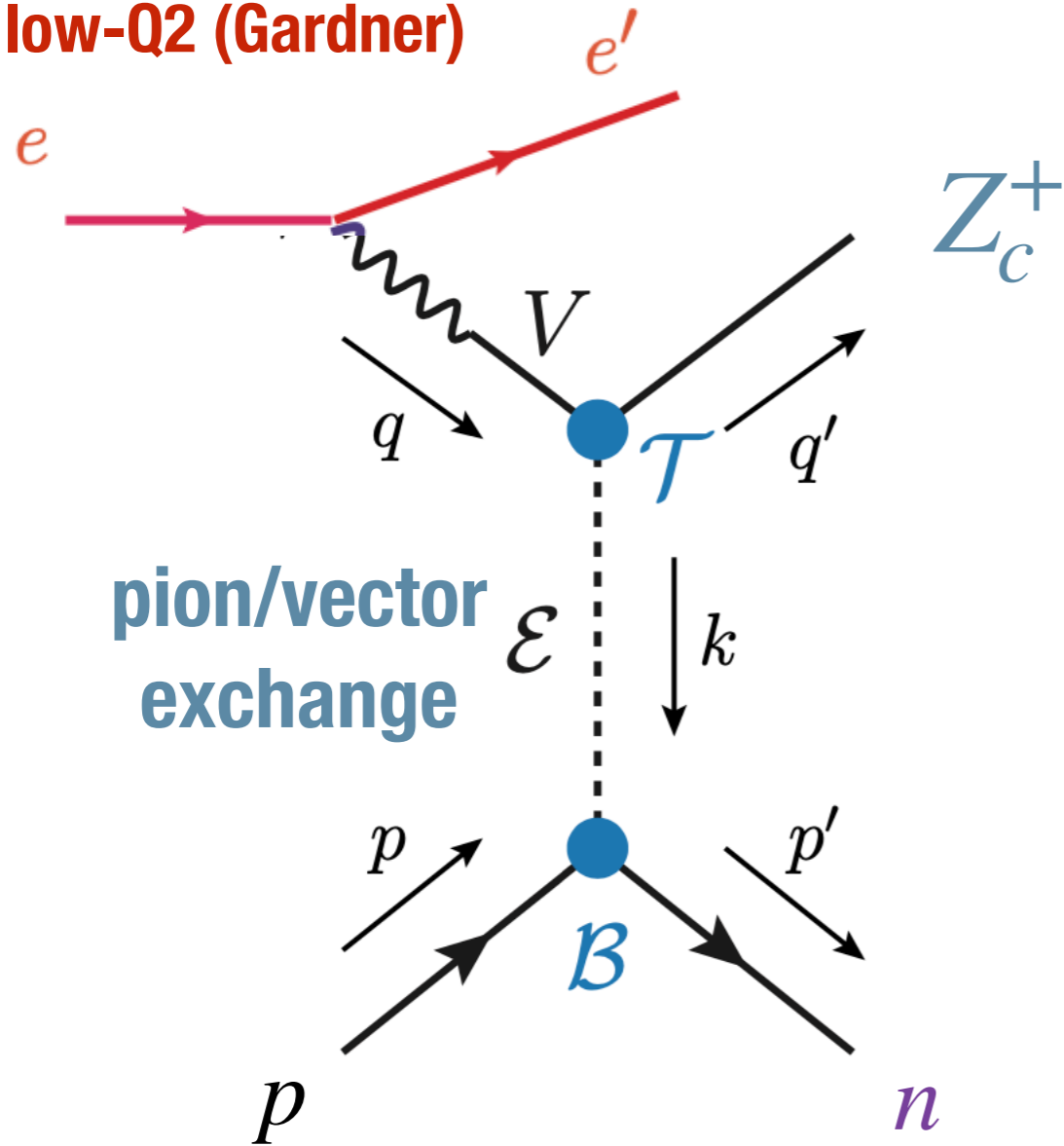
Detect low-t recoil
proton in far forward
Roman pots (Jentsch)



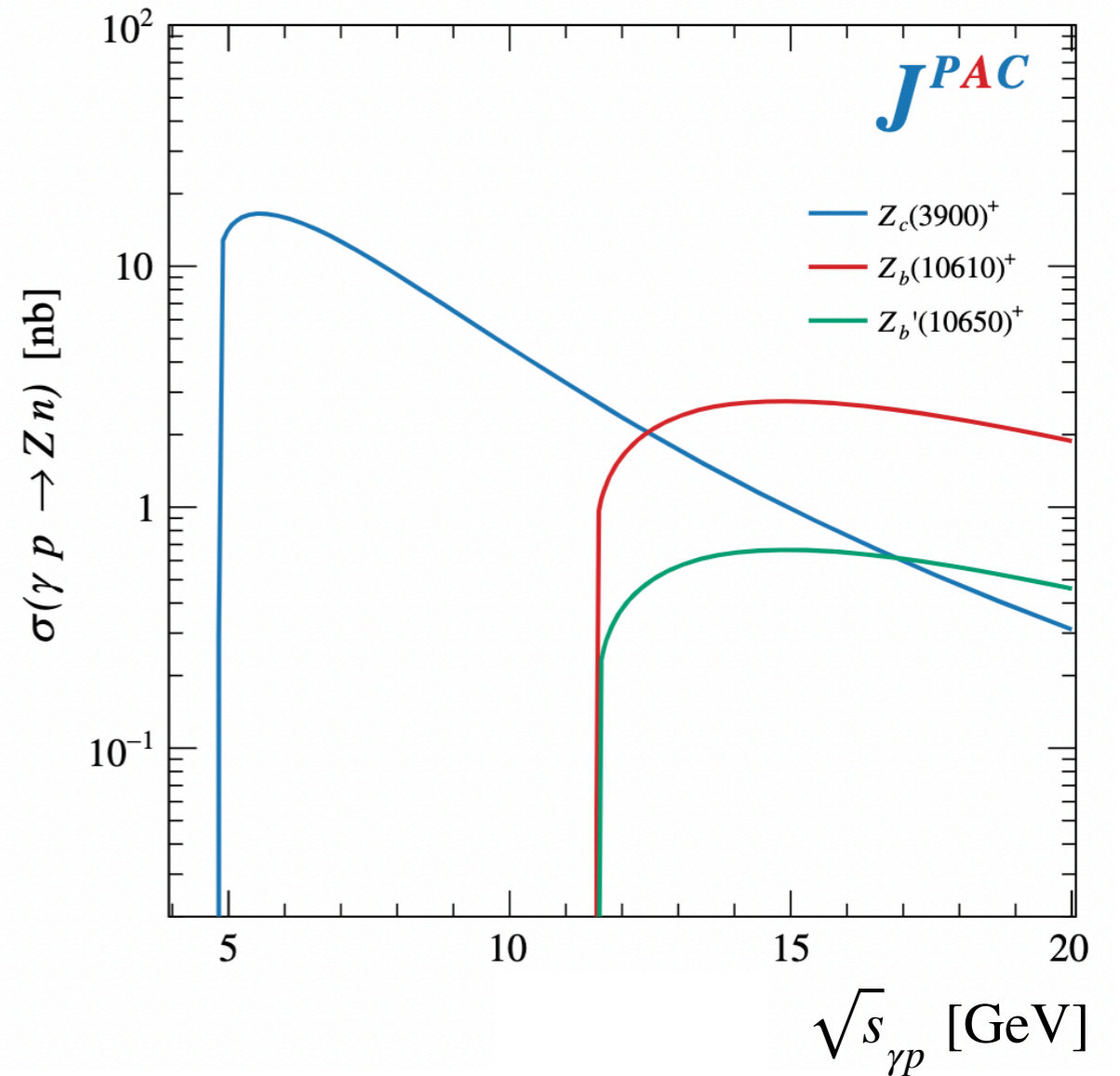
Y states expected to be produced
diffractively, increases with
energy like other vectors

Exclusive photoproduction

Tag scattered e-
low-Q2 (Gardner)



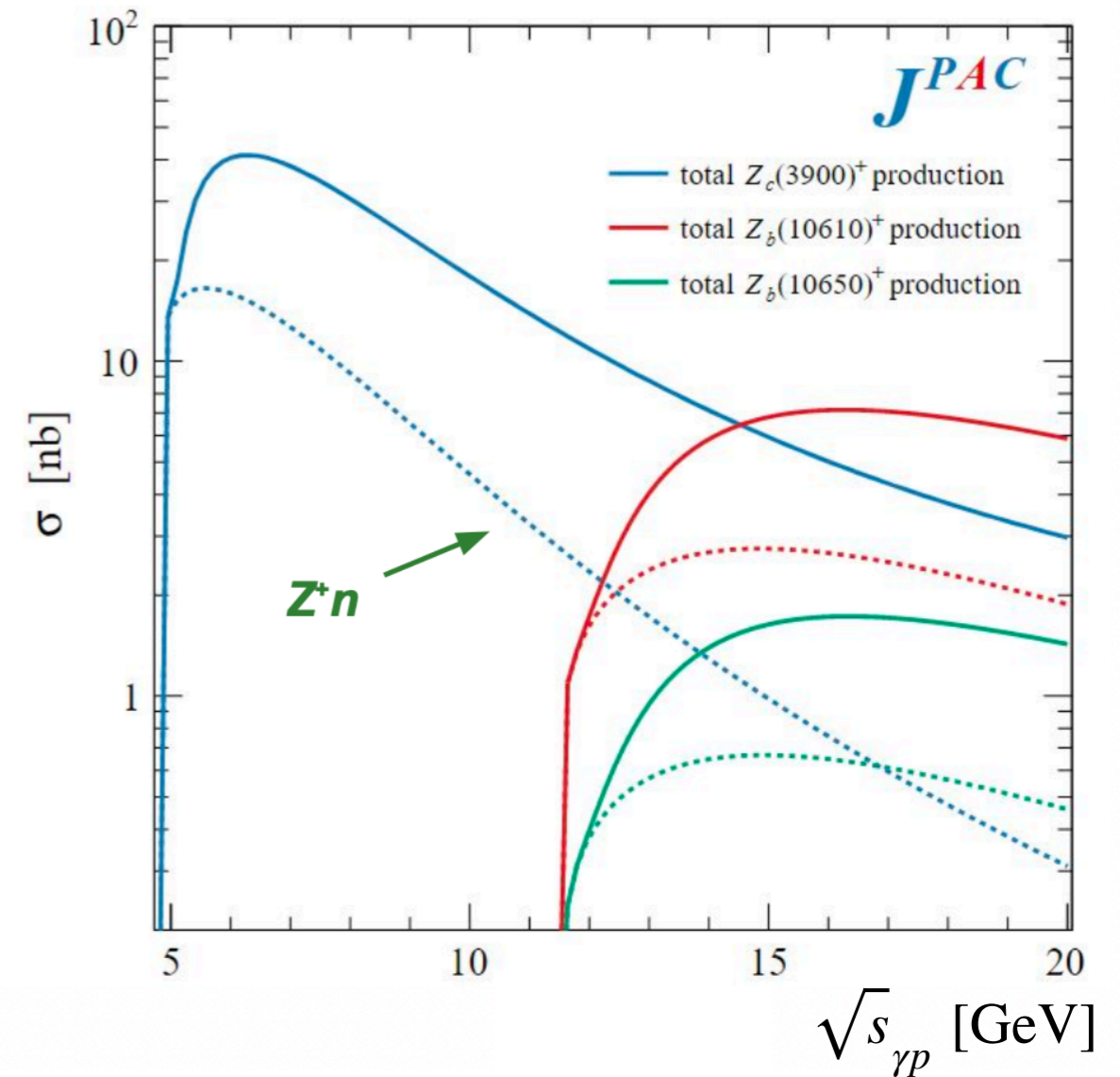
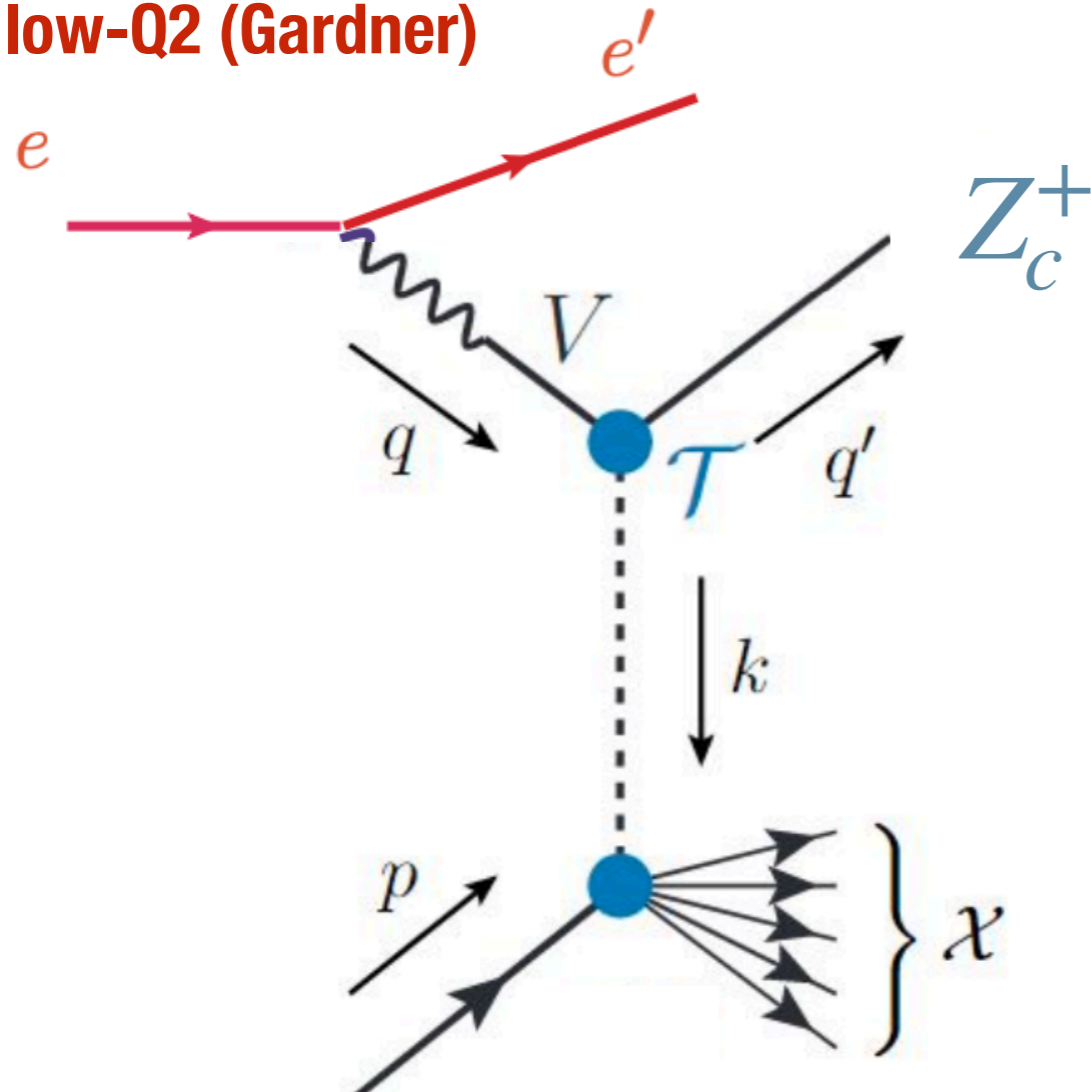
Detect low-t recoil
neutron in far forward
ZDC (Jentsch)



Significant exclusive production
near threshold

Semi-inclusive photoproduction

Tag scattered e-
low-Q2 (Gardner)



**Significant exclusive production
near threshold, semi-inclusive
persists to higher energies**

Detection of charmonium and XYZ

- * ePIC detector Overview (Surov)
- * Charged particle tracking (Li)
- * Muon detection (Boer)
- * AI/ML for triggering (Shi)

$$\chi_{c1}(3872) \rightarrow J/\psi \pi^+ \pi^-$$

$$J/\psi \rightarrow e^+ e^-$$

Simulations: Zha and Glazier

