

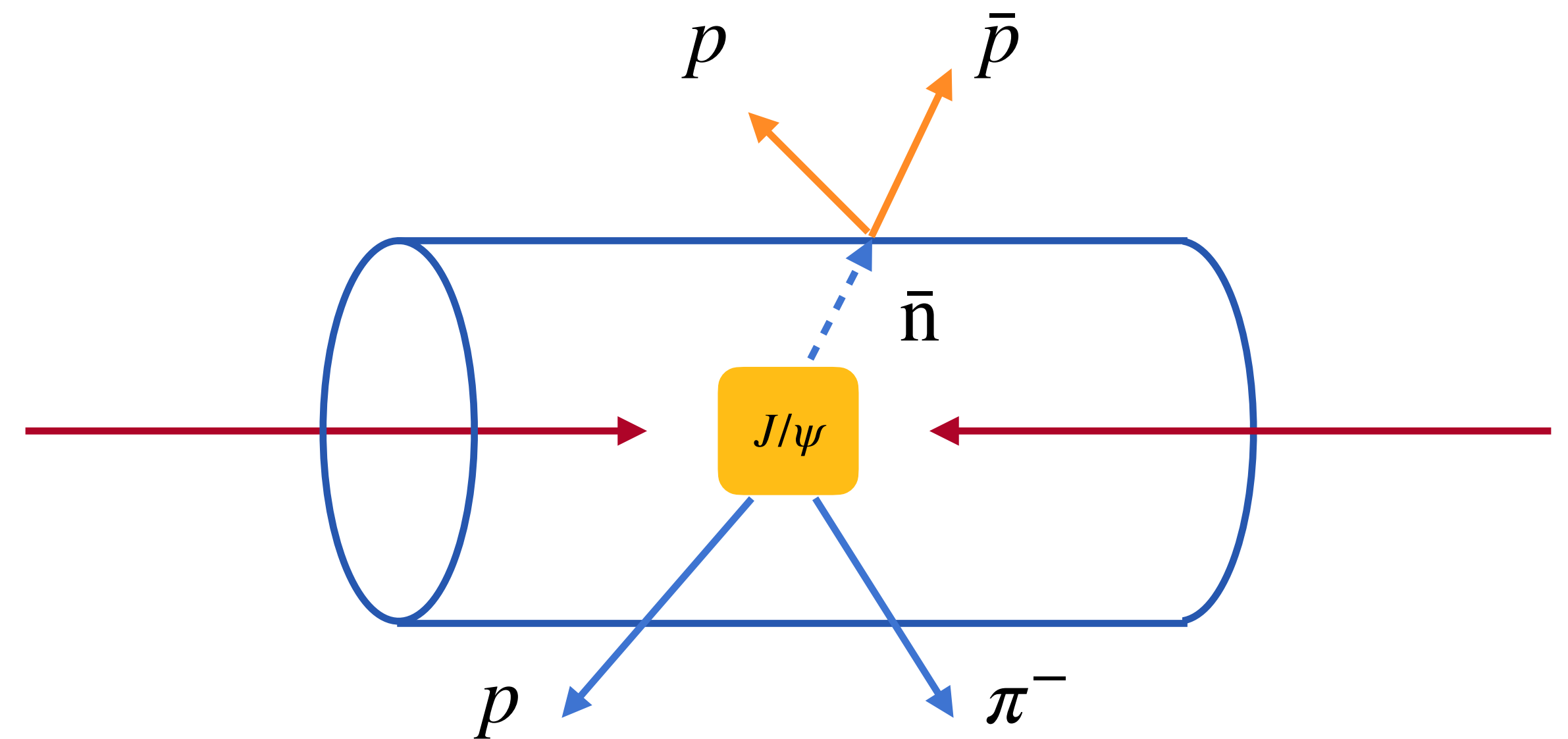
Outline

- Physics analysis on BESIII
 - Study of interaction of anti-neutron with material
 - Study of hyperon weak radiative decay
- Pre-research of ITKW on STCF
- Summary

Backup

Study of interaction of anti-neutron with material

- Motivation
- Strategy & Difficulties
- Progress
- Status



Anti-neutron analysis — Motivation

Why study charge-exchange (CEX) reaction^{1 2}

- Study the **isospin structure** of the $\bar{N}N$ interaction
($I = 0, I = 1$)
- Sensitive channel to probe the $\bar{N}N$ **large-distance force**
- Measure **analyzing power** (A_N) to provide constraints for theories

Analyzing power

- 4 Fermions, 5 complex amplitudes are needed to build up the scattering matrix, $d\sigma/d\Omega$ is not adequate
- depends on spin dynamics and spin structure of nucleon-nucleon (NN) system

- $$\frac{d\sigma}{d\phi d\cos\theta} = \frac{1}{2\pi} \frac{d\sigma_0}{d\cos\theta} [1 + P_y A_N(\cos\phi)]$$

