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Probing the nucleus structure with the anti-neutron source at BESIII

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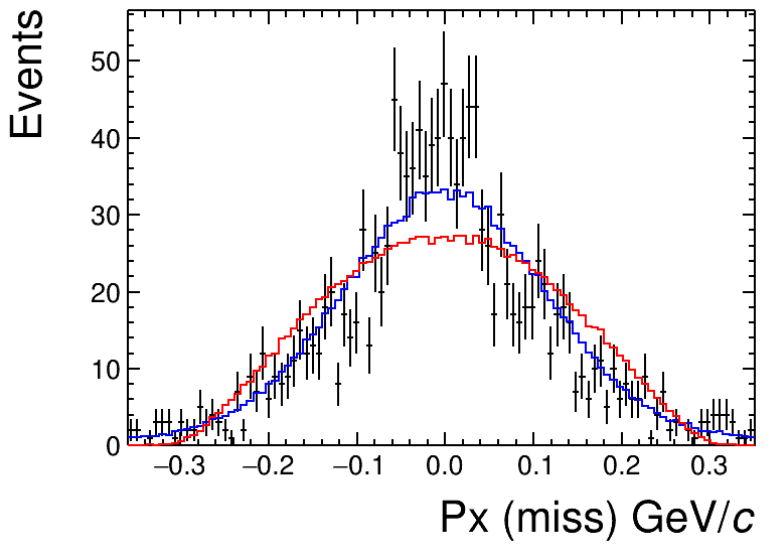
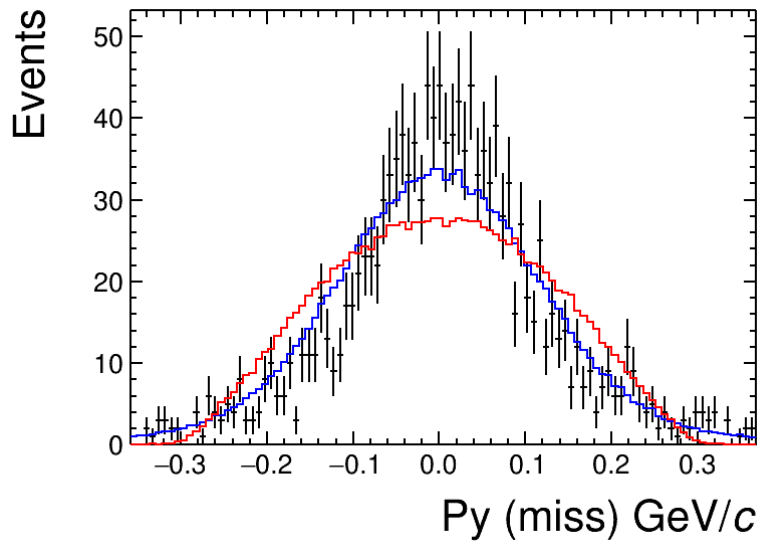
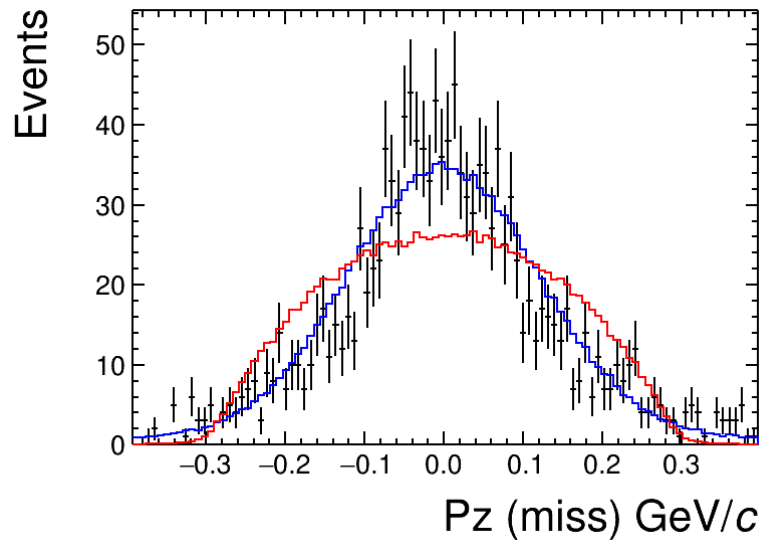
Phenomenological model

- Fermi momentum: using a double gaussian function to model momentum distribution of neutrons in nuclei.
- $P_{miss} = P_p + P_{\bar{p}} - P_{\bar{n}}$



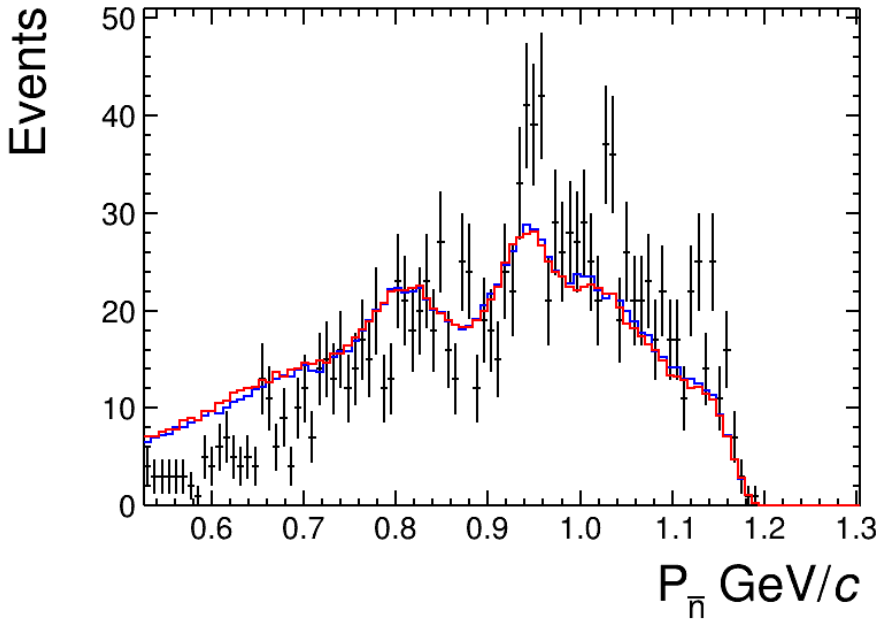


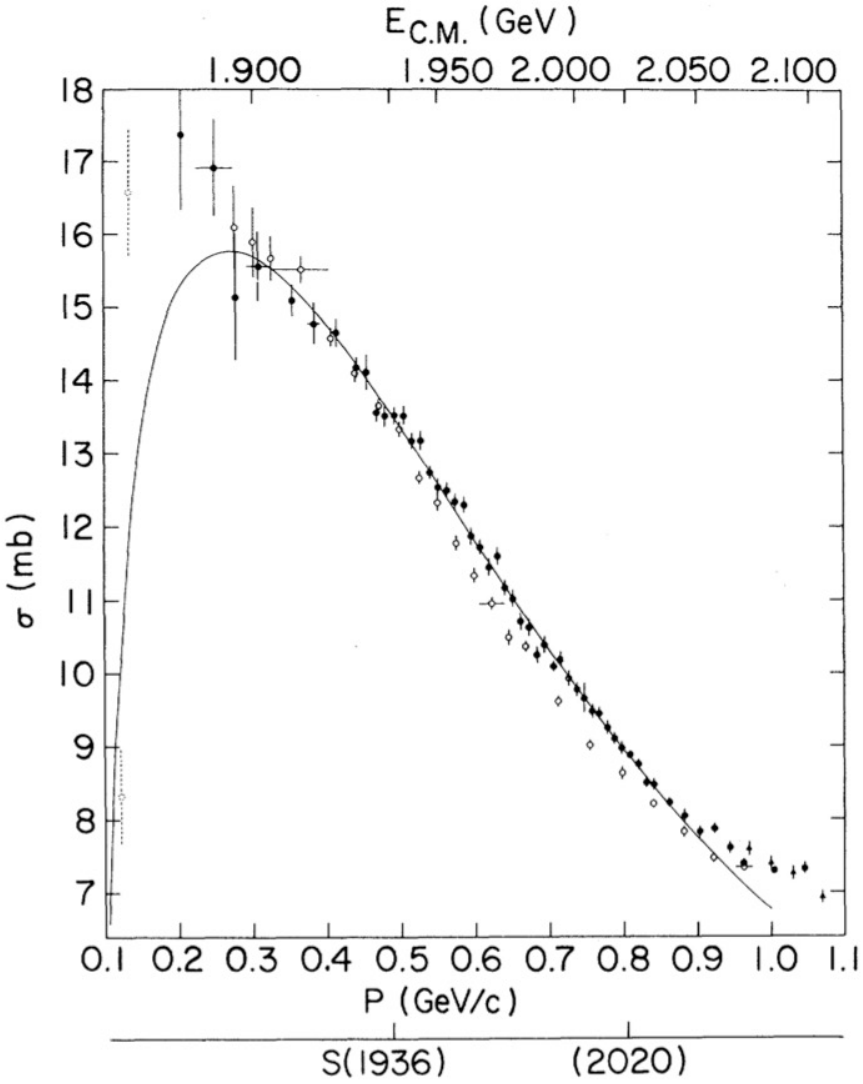


Phenomenological model

- Cross section refers to $p\bar{p} \rightarrow n\bar{n}$

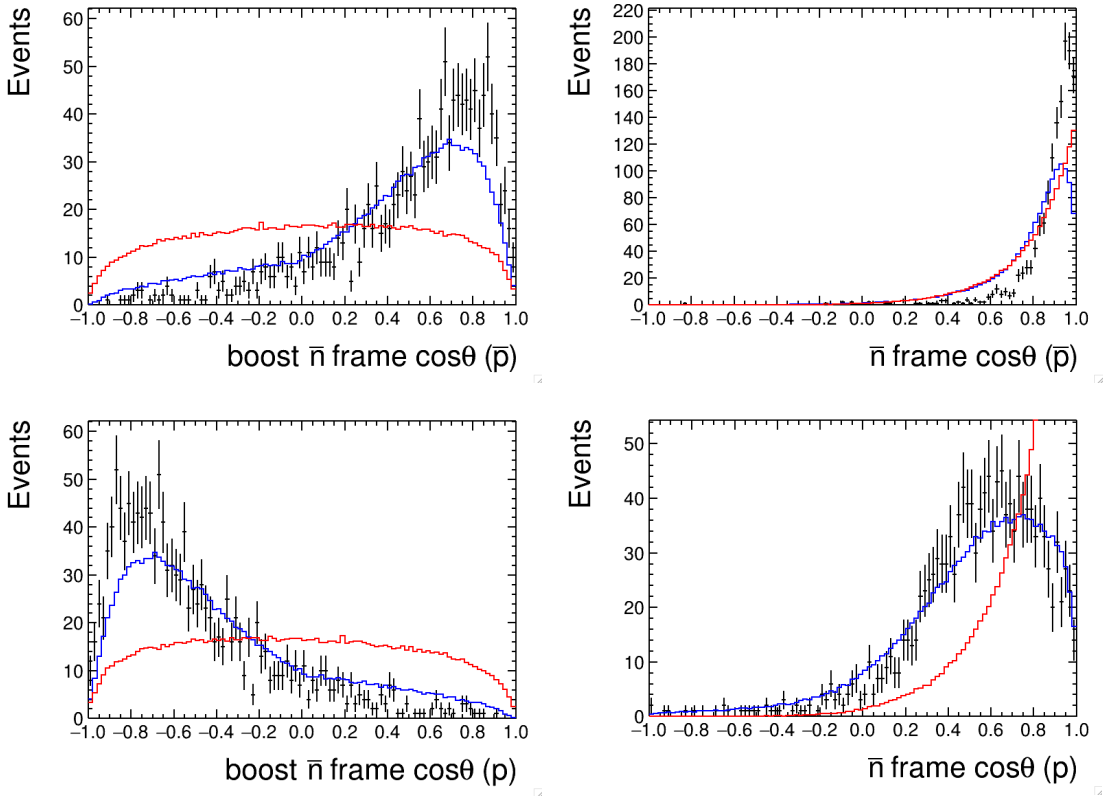
$$\sigma = \frac{17.34(1-(0.10/P)^2)^{1/2}}{1-0.45P+2.0P^2}$$

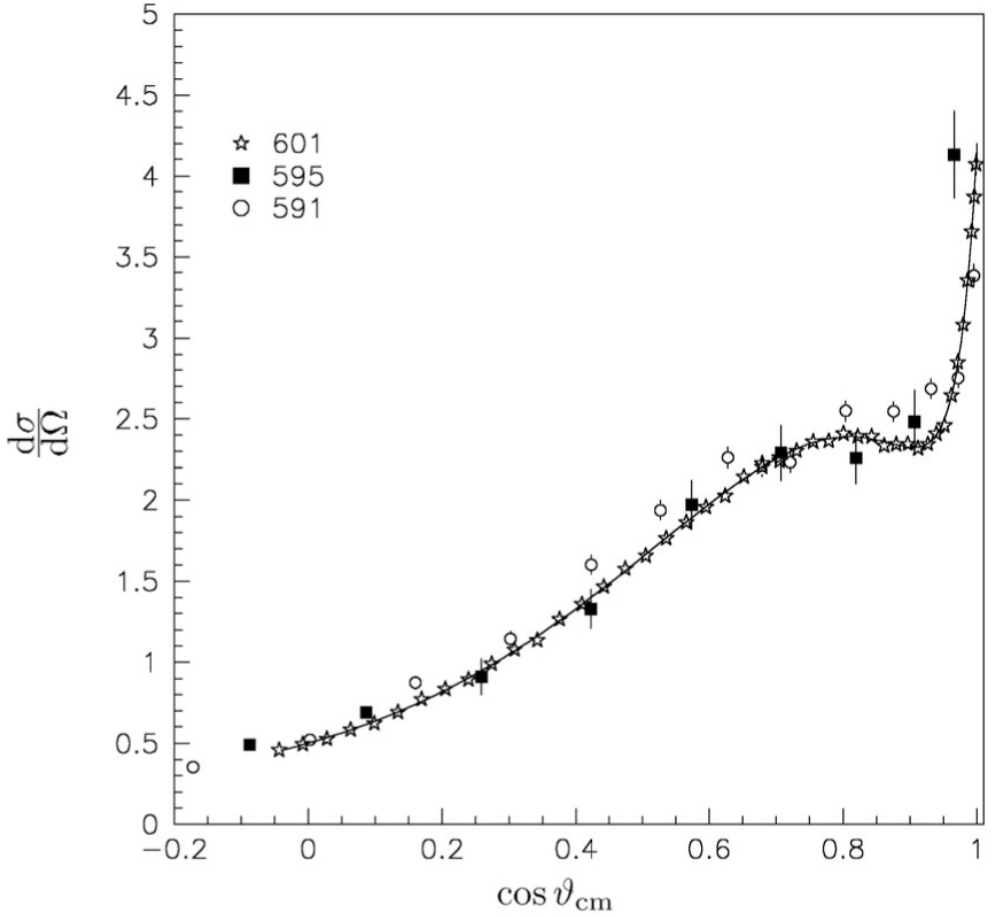




Phenomenological model

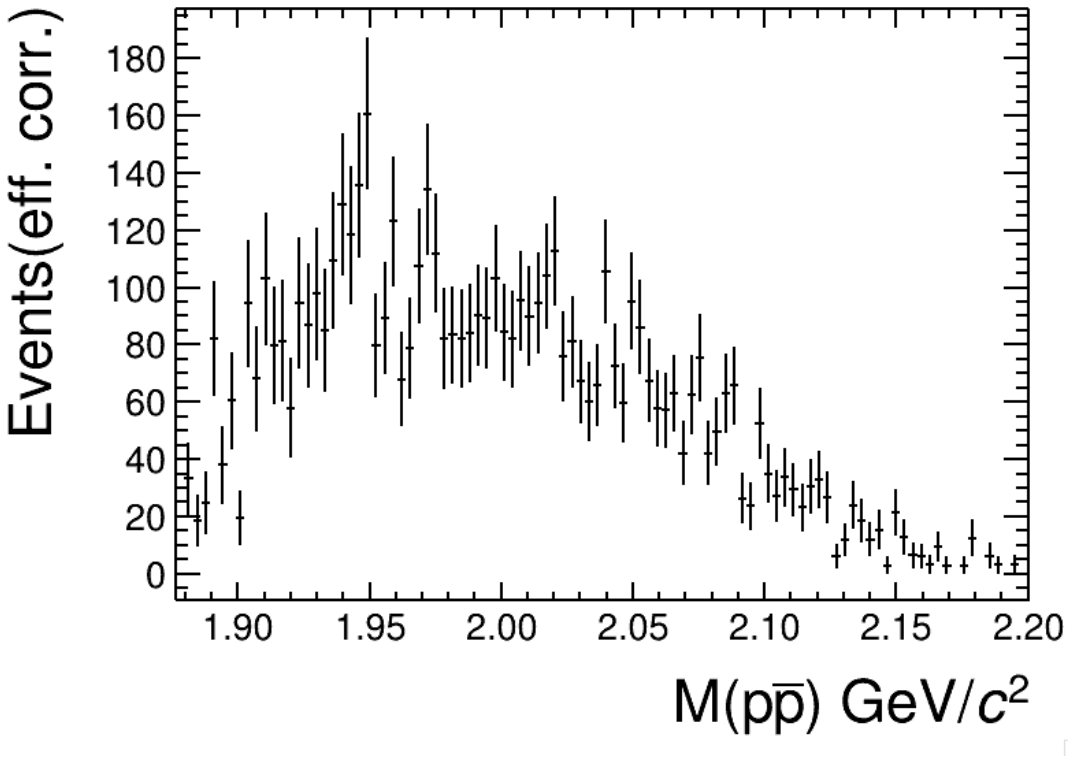
- Angular distribution refers to $p\bar{p} \to n\bar{n}$

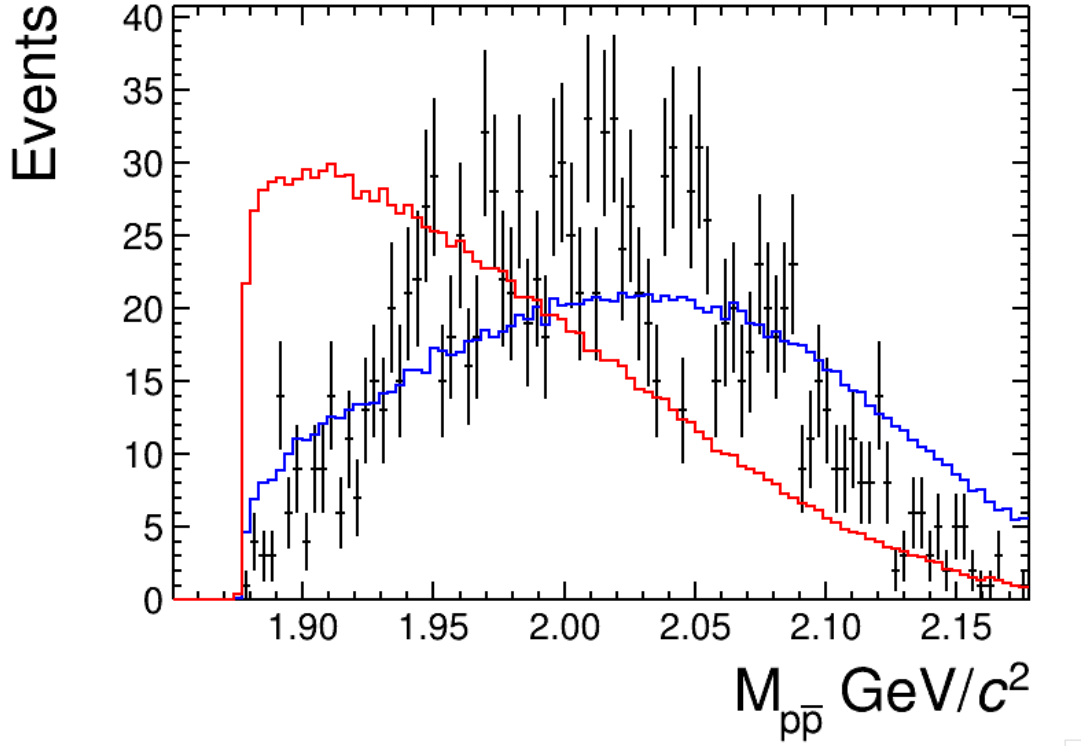




Phenomenological model

- $M(p\bar{p})$





Phenomenological model

- Energy momentum distribution of proton and antiproton