

Santa Fe Jets and Heavy Flavor Workshop

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Toward N³LL resummation of a DIS event shape

Monday, January 11, 2016 12:00 PM (30 minutes)

Event shapes provide a key method of measuring jets in deep-inelastic scattering (DIS). This was done successfully by H1 and ZEUS and compared with theoretical calculations with next-to-leading-logarithmic (NLL) resummation.

We will present our progress for a high precision calculation of a event shape called DIS thrust, with next-to-next-to-next-to-leading-logarithmic resummation. We will also show a rigorous treatment of hadronization corrections. Perturbative resummation uncertainties in the cross section are reduced to the 2% level for a significant region of the HERA phase space in x and Q , thus allowing for new accurate measurements of $\alpha_s(m_Z)$.

Presenter: KANG, Daekyoung (Los Alamos National Lab)

Session Classification: Session 2