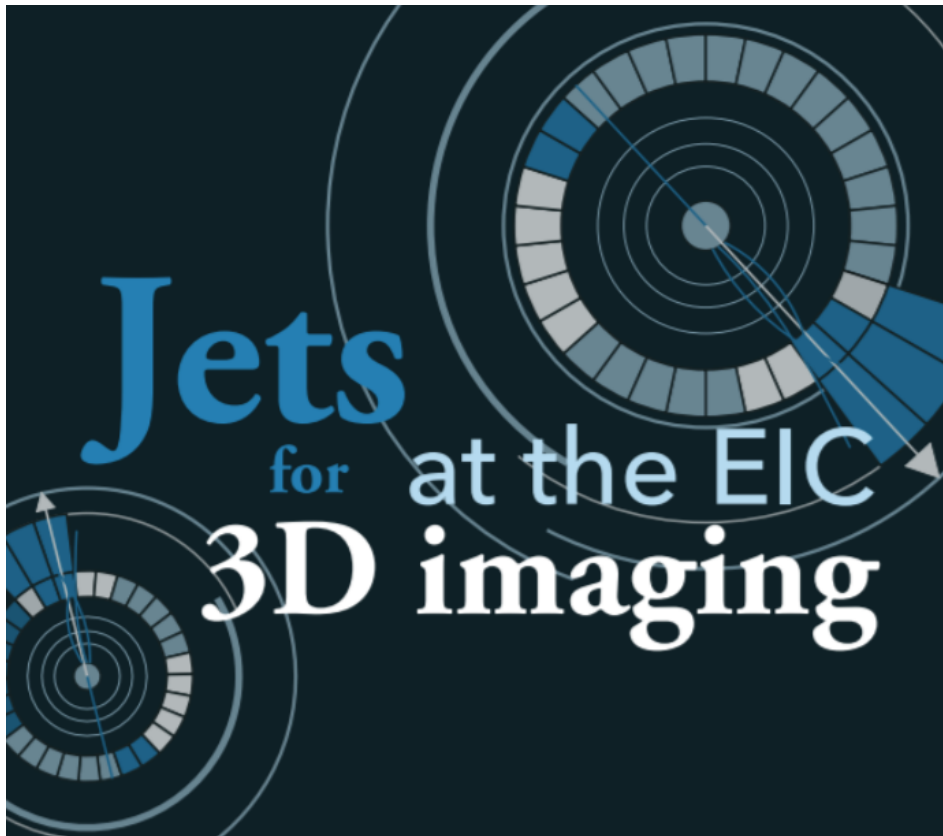


Jets for 3D imaging online workshop

Monday, 23 November 2020 - Wednesday, 25 November 2020

Online



Book of Abstracts

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Factorization of $e^+e^- \rightarrow H X$ cross section, differential in P_T and thrust, in the quasi 2-jet limit

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The factorization of the cross section for single hadron production in e^+e^- annihilations is highly non trivial when the transverse momentum of the outgoing hadron with respect to the thrust axis is taken into account. In this talk, I will present a scheme that allows to factorize this cross section as a convolution between a computable hard coefficient and a TMD fragmentation function. The cross section will be presented at NLO and NLL accuracy. This scheme also relates the TMD parton densities defined in 1-hadron and in 2-hadron processes, restoring the possibility to perform global phenomenological studies of TMD physics.

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Nucleon Tomography and Generalized Parton Distribution at Physical Pion Mass from Lattice QCD

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We present the first lattice calculation of the nucleon unpolarized generalized parton distribution (GPD) at the physical pion mass using a lattice ensemble with 2+1+1 flavors of highly improved staggered quarks (HISQ) generated by MILC Collaboration, with lattice spacing $a \approx 0.09$ -fm and volume $64^3 \times 96$. We use momentum-smearred sources to improve the signal at nucleon boost momentum $P_z \approx 2.2$ -GeV, and report results at 6 nonzero momentum transfers $[0.2, 0.9]$ GeV². Nonperturbative renormalization in RI/MOM scheme is used to obtain the quasi-distribution before matching to the lightcone GPDs. The three-dimensional distributions $H(x, Q^2)$ and $E(x, Q^2)$ at $\xi = 0$ are presented, along with the three-dimensional nucleon tomography and impact-parameter-dependent distribution for selected Bjorken x at $\mu = 3$ -GeV in $\overline{\text{MS}}$ scheme.

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Angular correlations in exclusive dijet photoproduction in ultra-peripheral PbPb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV

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Exclusive dijet photoproduction has been measured in ultra-peripheral lead-lead (PbPb) collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV. The analysis is based on a data sample corresponding to an

integrated luminosity of 0.38 nb^{-1} collected by the CMS Collaboration. For each dijet, the transverse momentum vectors of the leading and subleading jets are measured and their vector sum and vector difference determined. The azimuthal angle between the vector sum and vector difference defines an angle φ . The distribution of φ and, in particular, the second Fourier harmonic $h\cos(2\varphi)_i$ is measured. The dependence of $h\cos(2\varphi)_i$ on the sum of the jet momentum vectors provides the first azimuthal anisotropy measurement related to exclusive dijet production.

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