Contribution ID : **137** Type : **plenary talk**

Quarkonium pair production in high-energy proton-proton collisions

Tuesday, 12 June 2018 11:30 (0:30)

Collaboration

Abstract content

Recently there has been much interest in the pair production of quarkonia (charmonia, bottomonia). There are two main motivations behind these studies: first, these processes may help to differentiate between different proposed production mechanisms via color-octet and color-singlet $Q\bar{Q}$-pair production.
Second, the production of quarkonium pairs is expected to receive an important contribution from double parton scattering (DPS) processes. There remain a number of open problems, especially with the CMS and ATLAS data.
In the kinematics of these experiments, the leading order of $\mathcal{O}(\alpha_S^4)$ is clearly not sufficient. The double parton scattering (DPS) contribution was claimed to be large or even dominant in some corners of the phase space, when the rapidity distance Δy between two J/ψ mesons is large. However the effective cross sections $\sigma_{\rm eff}$ found from empirical analyses are about a factor 2.5 smaller than the usually accepted $\sigma_{\rm eff} = 15\,{\rm mb}$.
We will discuss, which single-parton-scattering mechanisms can mimic the behaviour of DPS induced production. Here especially the production of χ-pairs is important.

Primary author(s) : SCHAEFER, Wolfgang (IFJ PAN Krakow)

Presenter(s) : SCHAEFER, Wolfgang (IFJ PAN Krakow)

Session Classification : Plenary Session