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Impact of the QCD dynamics on the determination of the high energy astrophysical neutrino flux

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In this paper, we investigate the impact of different assumptions for the description of the QCD dynamics at high energies on the
determination of the normalization Φ and spectral index γ of the astrophysical neutrino flux. The distribution of neutrino events at the IceCube is estimated considering the DGLAP, BFKL and CGC approaches and the best estimates for Φ and γ are determined using a maximum likelihood fit comparing the predictions with the distribution of observed events at IceCube. We also investigate if the increase in the effective exposure time expected in IceCube - Gen2 will to allow us to disentangle the QCD dynamical effects from the description of the astrophysical neutrino flux.

Working group

WG2

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