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The pion renormalized light-cone wave function

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An approximate light-cone wave function for the pion effective quark-antiquark Fock sector corresponding to a small value of the renormalization group parameter λ will be presented. This wave function will be used to obtain wave functions of higher pion sectors for larger λ by the W -transformation [1].

The approximate wave function is motivated by the LF-holography [2] in harmony with the quadratic confinement potential in the front form of Hamiltonian dynamics [3], and thus also with the linear confining potential in the instant form. The S-wave and P-wave contributions to the wave functions will be discussed in the context of the pion diffractive scattering on platinum, using the experimental data of the E791 Experiment [4].

[1] S. D. Glazek, Acta Phys. Pol. B42, 1933 (2011)

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[3] A. P. Trawiński, et al., Phys.Rev. D90, 074017 (2014)

[4] E791 Collaboration, Phys. Rev. Lett. 86, 4768 (2001)

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