HADRONS AS A DISTRIBUTION OF CLASSICAL STRINGS[1]

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Hadronic structure functions are modeled as a distribution of solutions to the classical string model of Nambu and Gotō. In the model, the endpoints of the strings, identified as quarks, carry a finite amount of energy and momentum. The endpoint trajectories are assumed to be polygons, and it is shown that the structure function in the scaling limit is directly related to the distribution of lengths of the straight-line segments making up the polygons. The relationship is inverted to give an analytic expression for the distribution of straight-line segments in terms of the structure function. The results are applied to the measured proton and pion structure functions.

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