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Fractal Aspects of QCD

Saturday 5 September 2020 17:20 (25 minutes)

The scaling properties of Yang-Mills fields, and in particular of the QCD, are analyzed from the point of view of fractal systems. We show that fractal structures can be formed in any Yang-Mills field, and that the fractal dimension is related to the fundamental parameters of the field theory.

In addition, the fractal structures leads to power-law distributions that are related to the distributions in Tsallis non extensive thermodynamics. The entropic index, q , is determined from the QCD parameters, namely, number of flavours and number of colors.

Several experimental aspects of high energy collisions are analyzed under the light of the proposed theory. In particular, we show that the entropic index calculated is in good agreement with that obtained from experimental data analysis.

Is this abstract from experiment?

No

Internet talk

Yes

Name of experiment and experimental site

none

Is the speaker for that presentation defined?

Yes

Details

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