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Thermal interpretation of the proton number fluctuations in the beam-energy scan at RHIC/STAR

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We exposit an interpretation of the kurtosis and the skewness of the proton number fluctuation based on a thermal model.
We demonstrate that the kurtosis decreases to show a significant deviation from the unity due to quantum statistics when the baryon density grows up. Such a simple estimate of the fluctuations in a thermal gas picture fits in with the experimental data of the beam-energy scan at RHIC/STAR.

We also discuss effects from the nuclear matter region where the density dependent in-medium mass would further decrease the fluctuations.

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