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## Femtoscopic Bose-Einstein correlations in proton-proton collisions at 13 TeV with the CMS experiment

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Two-particle Bose-Einstein femtoscopic correlations are measured with the data from the LHC Run II collected by CMS in proton-proton collisions at 13 TeV. The analysis is performed over a wide range in event multiplicity, especially reaching the multiplicity regime in which long-range collective correlations were observed. This extension to high multiplicity events represents an important investigation to probe the behavior of the femtoscopic radius and shed light on theoretical models. Three different experimental techniques are applied and discussed in the measurement of these quantum-statistical correlations. Each one of them adopts a different analysis approach, with variable degrees of dependence on Monte Carlo simulated events, which is employed for estimating and correcting the non-Bose-Einstein contributions (resonances and mini-jets). All of the three methods employed provide values for the resulting one-dimensional fit parameters (lengths of homogeneity and correlation intensity) that are consistent within the experimental uncertainties of the analysis. The results are presented as a function of charged particle multiplicity and of the mean transverse pair momentum, in order to study the dynamical behavior of the emitting source.

### Content type

Experiment

### Collaboration

CMS

### Centralised submission by Collaboration

Presenter name already specified

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