# بيان بالبحث رقم (8)

## عنوان البحث:

**Study of charged-particle multiplicity fluctuations in *pp* collisions with Monte Carlo event generators at the LHC**

**دراسة التوزيعات العددية و (KNO Scaling) للجسيمات المشحونة الناتجة من تصادمات البروتون-بروتون عند طاقات مختلفة**

## منشور في:

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## المُلخص العربي للبحث:

**Proton–Proton (*pp*) collisions at the Large Hadron Collider (LHC) are simulated in order to study events with a high local density of charged particles produced in narrow pseudorapidty windows of $\Delta\eta$ = 0.1, 0.2, and 0.5. The *pp* collisions are generated at center of mass energies of $\sqrt{s}$ = 2.36, 7, 8, and 13 TeV, i.e., the energies at which the LHC has operated so far, using PYTHIA and HERWIG event generators. We have also studied the average of the maximum charged-particle density versus the event multiplicity for all events, using the different pseudorapidity windows. This study prepares for the multiparticle production background expected in a future search for anomalous high-density multiplicity fluctuations using the LHC data**