Contribution ID: **82** Type: **Invited (In person)**

Determination of the neutron skin of Pb-208 from ultrarelativistic nuclear collisions

Thursday 30 November 2023 11:00 (25 minutes)

The more diffusive skin of neutrons in Pb-208 has a wide range of implications ranging from nuclear structure to heavy ion collisions to neutron stars. In this talk I will present the first determination from relativistic heavy ion collisions at the LHC, which is complementary to dedicated studies such as by the PREX collaboration at JLab. In particular I will show that the larger size of the Pb nucleus due to the skin characteristically changes the number, average momenta and angular distributions of outgoing particles. Using a state-of-the-art global analysis this constrains the size of the neutron skin to be 0.217 ± 0.058 fm.

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Session Classification: Special Topics