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Odderon, proton structure and hollowness from the model-independent Levy imaging of elastic hadron-hadron collisions

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A new model-independent imaging method, the Lévy expansion, plays an important role in the analysis of the differential cross section of elastic hadron-hadron scattering. It enables for the first time to quantify simultaneously the signatures of the Odderon, internal substructures in the proton, as well as a subtle emergence of its hollowness at ultra-high collision energies directly from the existing precision data sets in a modelindependent way. I will present the basic properties of the Levy method and a selected set of new and most significant results of the Levy analysis, with a perspective into the future.

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