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Flow harmonic coefficients in small systems at the LHC: initial or final state effect?

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The experimental measurements of non-zero flow harmonic coefficients in p+A, and even in p+p, collisions at LHC energies have generated an ample debate on the heavy ion community in the last lustrum. Considered a golden probe of QGP formation in A+A collisions the interpretation of v_n 's distinct from zero in small collision systems remains unclear. This is so because a reasonable description of the data has been achieved in both the hydrodynamical picture, where the formation of a QGP droplet is assumed, and the Color Glass Condensate framework in which the v_n 's arise from initial state momentum correlations. In this talk, I will review the up-to-date theoretical status and present a novel study in which the impact on the flow harmonic coefficients of two orthogonal effects is gauged. One of them consists in modifying the initial geometry of the colliding protons at the sub-nucleonic level. The other is directly related to variations in the parameters of the hydrodynamical evolution such as the shear viscosity or the particlization temperature.

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