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Measurements of p_T -differential v_2 and v_3 using multi-particle cumulants in Pb-Pb and Xe-Xe collisions

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Anisotropic flow coefficients v_n have been used as a tool to probe the initial conditions and transport properties of the strongly interacting matter produced in heavy-ion collisions. In this talk we report on the measurements of p_T -differential v_2 and v_3 coefficients for charged hadrons using two- and multi-particle cumulants in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV and Xe-Xe collisions at $\sqrt{s_{NN}} = 5.44$ TeV. In order to discuss the non-flow effects, we also present results obtained using a novel 2-subevent technique. We observe that the $v_2\{6\}$ and $v_2\{8\}$ deviate from $v_2\{4\}$, indicating that the underlying probability density distribution of v_n coefficients is not well-described by the Bessel-Gaussian distribution. This provides new constraints on the initial geometry and its event-by-event fluctuations of heavy-ion collisions. Moreover, the non-trivial evolution of $v_2\{6\}/v_2\{4\}$ and $v_2\{8\}/v_2\{4\}$ ratios with p_T suggests that the transport properties of the expanding medium play an important role to the azimuthal distributions of charged hadrons.

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