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Measurement of the azimuthal angle dependence of jet yields in Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02 \sim \text{TeV}$ with the ATLAS detector

It has been shown that high energy partons lose energy when traversing the hot, dense medium produced in heavy-ion collisions. However, the mechanism of the energy loss, including its dependence on the path-length of the shower in the medium, is not fully understood. This poster presents a measurement of single jet yields as a function of the azimuthal angle with respect to the event plane in Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02 \sim \text{TeV}$. Because jets at different angles with respect to the event plane traverse, on average, different path lengths of the medium, this measurement gives insight into the path-length dependence of parton energy loss. The azimuthal angle dependence of the yields is characterized by the parameter v_n^{jet} , which quantifies the magnitude of the modulation of the azimuthal angle distribution with respect to the n^{th} order event plane. While ATLAS has previously reported the v_2^{jet} in Pb+Pb at $\sqrt{s_{NN}} = 2.76 \sim \text{TeV}$, this is the first ATLAS measurement of higher order v_n^{jet} .

Collaboration (if applicable)

ATLAS

Track

Jets and High Momentum Hadrons

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Primary authors: COLLABORATION, ATLAS; ZIVKOVIC, Lidija (Institute of physics Belgrade (RS))

Presenter: COLLABORATION, ATLAS

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