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## Azimuthal correlations of heavy-flavor decay electrons and charged particles with the ALICE detector

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Heavy-flavor (charm and beauty) quarks are generated primarily via hard scattering processes in high-energy hadronic collisions, and then undergo parton shower (fragmentation) and hadronization. Two-particle azimuthal correlations of heavy-flavor particles is a differential measurement which allows for the study of the fragmentation of heavy quarks. By measuring the azimuthal correlation in different transverse momentum ( $p_T$ ) regions, one can study the details of the structure and particle momentum distribution of jets produced by the heavy-quark fragmentation process. The azimuthal correlations between electrons from heavy-flavor decays (trigger) and charged particles (associated) are studied in different trigger and associate particle  $p_T$  regions. A distinguishing feature of heavy-ion collisions is the production of a hot and deconfined state of nuclear matter, called Quark Gluon Plasma (QGP). By comparing the heavy-flavor and charged particle azimuthal correlations in Pb-Pb collisions to measurements in smaller collision systems, we can determine how the heavy-quark fragmentation is modified by interactions with the QGP medium. In this poster, ALICE results on the modifications of the azimuthal distribution in Pb-Pb collisions with respect to pp collisions will be presented. The results in pp and p-Pb collision systems will also be shown and compared to predictions from Monte Carlo simulations.

### Category

Experiment

### Collaboration (if applicable)

ALICE Collaboration

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