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## First measurement of the Upsilon(1S) elliptic flow in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.36$ TeV with ALICE

Quarkonia, which are bound states of heavy-flavor quark-antiquark pairs, have long been considered crucial probes for studying the quark-gluon plasma (QGP). In a simplified picture, the production of quarkonium is suppressed due to color screening within the QGP, formed during nucleus-nucleus collisions. A key observable in this context is the azimuthal anisotropy of quarkonia, providing valuable insights into the collective dynamics of particles in a strongly interacting medium. The measurement of this anisotropy is achieved through harmonic coefficients derived from the Fourier decomposition of the azimuthal particle distribution. In non-central collisions, the coefficient  $v_2$  of the second harmonic measures the strength of the so-called elliptic flow and is the most important source of information on the degree of thermalization of the medium. Due to the large mass of the beauty quark that may prevent its thermalization, the  $\Upsilon(1S)$ , a bound  $b\bar{b}$  state, is expected to exhibit a lower  $v_2$  with respect to the  $J/\psi$ , a  $c\bar{c}$  bound state.

For these reasons, a study of the  $\Upsilon(1S)$  flow with the latest data collected in ALICE from the recent LHC data-taking period may provide interesting insights on the degree of thermalization of the beauty quark. This contribution will present the first measurement of  $v_2$  for  $\Upsilon(1S)$  studied through its decay into  $\mu^+\mu^-$  pairs at  $\sqrt{s_{NN}} = 5.36$  TeV.

### Category

Experiment

### Collaboration (if applicable)

ALICE collaboration

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