

Anisotropic flow of charmonium states in heavy ion collisions

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We discuss anisotropic flow, or elliptic and triangular flow of charmonium states in heavy ion collisions using the coalescence model. Starting from the investigation on transverse momentum distributions of charmonia, we calculate elliptic and triangular flow of charmonium states produced at quark-hadron phase boundary by quark recombination. We argue that the wave function distribution plays a significant role, especially, in the production of charmonium states, leading to the transverse momentum distribution of the $\psi(2S)$ meson as large as that of the J/ψ meson. On the other hand, we find that the wave function effects as well as feed-down contributions are averaged out for elliptic and triangular flow, resulting in similar elliptic and triangular flow for all charmonium states. Based on our evaluation of elliptic and triangular flow of charmonium states we also discuss the quark number scaling of elliptic and triangular flow for charmonium states in heavy ion collisions.

Theory / experiment

Theory

Group or collaboration name

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