

Abstract Submitted
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Distortion of the HBT images by meson clouds¹ KOICHI HATTORI, TETSUO MATSUI, Institute of Physics, University of Tokyo — We study the effects of mesonic final state interactions on the Hanbury Brown and Twiss intensity interferometry in ultra-relativistic heavy ion collisions. Modification of the one-body amplitude of emitted mesons while traversing a cloud of other mesons is estimated adopting the semiclassical approximation. The difference of the phase shifts causes a distortion of the images reflecting the two particle interference. Many body interaction due to the strong interaction among a particle and the rest of the system except for baryons is modeled with a optical potential which incorporates both coherent forward scattering and the absorption due to the incoherent scattering in the clouds. We found distortion of the images in the direction of both outward and sideward due to the real part of optical potential. Repulsive potential elongate the images in the outward direction, and attractive potential stretches in the sideward direction. However, the surface-dominated emission in the existence of the imaginary part of optical potential weakens the effect of the real part. The distortion is effective below around 100 MeV and weakens at high momentum regime. K. Hattori, T. Matsui, nucl-th/0905.3210

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