

One-, Two- and Three-Particle Distributions from Central Pb + Pb Collisions at 158A GeV/c

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Abstract

Single particle spectra combined with two-particle correlations allow the determination of the parameters of hydrodynamical evolution models of the source. While two-particle correlations are an essential tool to obtain information on the size and time evolution of expanding systems created in heavy-ion collisions, three-particle interferometry can provide additional information on the space-time emission. In particular, if the emission is fully chaotic, the three-particle interference study gives access to the phase of the source function's Fourier transform, which is affected by the emission asymmetry. In this contribution, results from one-, two- and three-particle distribution analyses for identified particles from central 158A GeV Pb + Pb collisions by the CERN SPS WA98 experiment are reported. A substantial contribution of the genuine three-body correlation has been found as expected for a mainly chaotic and symmetric source.
