Anmeldung zur Frühjahrstagung der
Deutschen Physikalischen Gesellschaft
vom 16.3. bis 20.3.1998
in **Bochum**

Particle interferometry of expanding nuclei — •C. SCHWARZ für die ALADIN – KOLLABORATION — Planckstr. 1, 64291 Darmstadt

Exploring the statistical and dynamical evolution of an hot expanding source, we have measured correlation functions of light charged particles. Ejectiles from the interaction zone in central Au+Au collisions between 50 and 200 AMeV, which are subject of increasing radial flow, where detected in three high-resolution hodoscopes within the ALADIN setup at GSI. The particular importance of the temporal evolution of the reaction process is evident from the differences of temperatures obtained from isotopic yields and from populations of particle-unstable resonances. Exploiting the final state interaction between particle pairs, we determined freeze out radii which reveal the expansion of the source. The extracted values were corrected for sequential feeding, Coulomb distortions of the emitting zone, and initial correlations caused by the radial flow. The obtained radius parameters from p-α and d-α correlations are large, indicating breakup densities of about one third of normal nuclear density. However, extracted breakup radii from proton-proton pairs show a strong dependence on the beam energy and will be discussed in terms of freeze out conditions.

Vom Tagungsleiter auszufüllen

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Anschrift:	C. Schwarz, KP3 Gesellschaft für Schwerionenforschung mbH Planckstr. 1 64291 Darmstadt Tel.: 49-6159-71-2765
Email:	C.Schwarz@gsi.de

Ich bin Mitglied der Deutschen Physikalischen Gesellschaft (Mitgliedsnummer: 931973).