Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

Final state interactions in two-proton interferometry and decay[1]

CARLOS BERTULANI, University of Arizona — There is an intriguing possibility, that a diproton (2He) correlation may play an important role in the mechanism of 2p emission from nuclear states. Correlations of 1S0 proton pairs produced in (d,2He) reactions have also been used to test the Bell and Wigner inequalties against the predictions of quantum mechanics. Finally, two-particle correlations are widely used in relativistic heavy-ion physics as a tool for extracting information about the spatial and temporal extent of the system at freeze-out. We have perfomed calculations for the effect of final state interactions of the correlated pair depending on initial conditions and on the properties of the interaction.

[1]US Department of Energy Grant No. DE-FG02-04ER41338.

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Date submitted: 30 Jun 2006 Electronic form version 1.4