Observing Non-Gaussian sources in Relativistic Heavy-Ion Reactions

David A. Brown\textsuperscript{a} Pawel Danielewicz\textsuperscript{b}

\textsuperscript{a}Lawrence Livermore National Laboratory, Livermore, CA, USA
\textsuperscript{b}National Superconducting Cyclotron Laboratory, East Lansing, MI, USA

\textit{Presented by:} David Brown

\textbf{Abstract}

We examine the possibility of extracting non-Gaussian sources from two-particle correlations in relativistic heavy-ion reactions. Non-Gaussian sources have been predicted in a variety of model calculations and may have been seen in various like-meson pair correlations. We investigate pion, kaon, and proton sources from the p-Pb reaction at 450 GeV/nucleon and from the S-Pb reaction at 200 GeV/nucleon studied by the NA44 experiment. Both the pion and kaon sources from the S-Pb correlations seem to exhibit a Gaussian core with an extended, non-Gaussian halo. We also find evidence for a scaling of the source widths with particle mass in the sources from the p-Pb reaction.