

Investigating cold nuclear matter with virtual photons

Manuel Lorenz for the HADES Collaboration

Goethe Universität Frankfurt, Germany, *Lorenz@Physik.uni-frankfurt.de*

The HADES experiment, installed at the Helmholtzzentrum für Schwerionenforschung (GSI) accelerator facility in Darmstadt, investigates dielectron emission and strangeness production in the 1-2 AGeV regime. Recently, the HADES collaboration concluded an experiment focussing on medium-modifications of light vector mesons in cold nuclear matter. In two runs, p+p and p+Nb reactions were investigated at 3.5 GeV beam energy and about $9 \cdot 10^9$ events have been registered. In contrast to other experiments the high acceptance of the HADES detector allows for a detailed analysis of dielectron pairs with low momenta relative to the medium, where modifications of the spectral functions of vector mesons are predicted to be most prominent. Comparing slow and fast dielectron pairs from the same data sample, we find a strong modification in the shape of the spectral distribution in the whole vector meson region. The interpretation for the strong modification of the spectral distribution will be discussed.