

The in-medium ϕ -meson width in proton-nucleus collisions

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The production of ϕ mesons at small angles in proton collisions with C, Cu, Ag, and Au targets has been measured via the $\phi \rightarrow K^+ K^-$ decay at an incident energy of 2.83 GeV using the COSY-ANKE magnetic spectrometer. The measured target mass dependence for the production cross section can be related to the in-medium ϕ meson width. Comparison with different model calculations suggests a significant broadening of this width for normal nuclear density and evidence for a momentum dependence in the region of $p_\phi = 0.6 - 1.6$ GeV/ c .

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