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# Momentum dependence of hadronic production of the phi-meson and the in-medium phi-width in nuclear matter

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Information on the properties of the $\phi$ meson in the nuclear environment has been derived from its production in proton collisions with C, Cu, Al, and Au nuclear targets. The experiment was carried out with 2.83~GeV protons at the Cooler Synchrotron COSY, with the $\phi$ being detected via its $K^+K^-$ decay using the ANKE magnetic spectrometer. The measured dependence of the production cross section on the nuclear mass number has been compared with calculations within three different nuclear models. These suggest a significant broadening of the width of the $\phi$ in medium relative to the vacuum value of 4.3~MeV/$c^2$. The ANKE results in the available momentum range of $0.6 < p_\phi < 1.6$ GeV/$c$ will be discussed and compared with data from photoproduction experiments on various nuclei at slightly higher momenta.

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