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## In-medium effects on hidden strangeness production in heavy-ion collisions

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We study the  $\phi$  meson production in heavy-ion collisions from subthreshold energies of 1.23 A GeV up to RHIC energies within the microscopic Parton-Hadron-String Dynamics (PHSD) transport approach where the novel production channels of  $\phi$  meson based on the coupled channel  $T$ -matrix approach are implemented along with the collisional broadening of  $\phi$ -meson spectral width in medium.

Since  $\phi$  meson production is closely related to the production of kaon and antikaon, antikaon properties are described via the self-consistent coupled-channel unitarized scheme within a SU(3) chiral Lagrangian ( $G$ -matrix) which incorporates explicitly the  $s$ - and  $p$ - waves of the kaon-nucleon interaction, and the in-medium modification of kaons are accounted via the kaon-nuclear potential, which is assumed to be proportional to the local baryon density.

The medium effects on the  $\phi$  production is investigated by comparing with the experimental data from the FOPI, HADES and STAR Collaborations. The new production channels of  $\phi$  meson as well as the broadening of the width in medium enhances the  $\phi$  production near threshold energies and we find agreement with data without invoking unknown resonance decays, as done in alternative approaches.

### Present via

Online

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