

Sound velocity peak driven by chiral partners in dense two-color QCD

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Recently the lattice simulation in two-color QCD at finite density clarified that the squared sound velocity cs^2 exceeds the conformal limit $1/3$. We know that at $\mu \rightarrow \infty$ the conformal limit is realized, thus, a peak structure was numerically observed. Theoretically, on the other hand, the ChPT is known to predict a monotonic increment of cs^2 to yield $cs^2 \rightarrow 1$ at sufficiently dense regime, and fails in deriving the peak. In this talk, I will show that, based on our linear sigma model in dense two-color QCD, chiral-partner contributions from sigma meson can successfully lead to the peak structure.

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