

— 第961回九大原子核セミナー —

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演題： Studying the phi meson in nuclear matter by simulating low energy pA reactions

日時： 11月22日(金) 16:30 ~

場所： 九州大学伊都キャンパス

ウエスト1号館7階 物理セミナー室2 (W1-A-722)

概要

The behavior of the phi meson in nuclear matter has attracted renewed interest because of (recent and future) experiments that aim to study its properties in nuclei [1-3]. Theoretically, many works have however been conducted assuming infinite nuclear matter [4-5], which is not realistic from an experimental point of view. To relate theoretical predictions with experimental observables, a thorough understanding of the actual reaction, in which the phi meson is produced in a nucleus, is required. For the past E325 experiment at KEK [1] and the future E16 experiment at J-PARC [3], this is a pA reaction with initial proton energies between 10 and 30 GeV. To simulate such a reaction, we make use of the PHSD transport approach, which is based on a covariant microscopic transport model [6]. In this framework, the phi meson spectral function obtained theoretically as a function of density, can be used as an input, while the output of the simulation can be compared with experimentally observed dilepton spectrum. In this presentation, I will give an overview of first results obtained in simulations of the reactions probed at the E325 experiment at KEK.

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[4] P. Gubler and K. Ohtani, Phys. Rev. D 90, 094002 (2014).

[5] P. Gubler and W. Weise, Phys. Lett. B 751, 396 (2015).

[6] W. Cassing and E. Bratkovskaya, Phys. Rev. C 78, 034919 (2008).

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