Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

Formation of Slow Heavy Mesons in Nuclei SATORU HIRENZAKI, Nara Womens University — Meson - nucleus systems such as mesic atoms and mesic nuclei have been studied systematically for a long time. The binding energies and widths of these bound states provide us unique and valuable information on the meson-nucleus interactions. In addition, the measurements of light vector meson spectra in nucleus as the invariant mass of lepton pairs have also provided interesting information. So far, the properties of relatively light mesons have been studied well both theoretically and experimentally. In this contribution, to extend our studies to a domain of heavier mesons, we would like to report recent research activities on the formation of heavy mesons in nuclei with small momenta. We think it is very interesting to consider the in-medium properties of heavier mesons including heavy quark contents. As a first step to heavier mesons, we will report our studies on formation of slow *phi* meson in nuclei. In-medium properties of *phi* meson have been studied theoretically, which have close relation to K and K-bar meson properties in medium because of the strong coupling of *phi* to K and K-bar. The study of QCD sum rule and the data taken at KEK suggested 3 percent mass reduction of *phi* at the normal nuclear density, while the *phi* meson selfenergy calculated in some effective models indicated a significantly smaller attractive potential for *phi*. We will show the calculated spectra for some reactions.

Satoru Hirenzaki
Nara Womens University

Date submitted: 22 Jun 2009 Electronic form version 1.4