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Search for eta bound states in nuclei M. SHINDO, K. GOMIKAWA, R.S. HAYANO, N. ONO, Department of Physics, University of Tokyo, H. OUTA, K. ITAHASHI, M. IWASAKI, Advanced Meson Science Laboratory, RIKEN, K. SUZUKI, Physik-Department, Technische Universitat Munchen, K. LINDBERG, P.-E. TEGNER, I. ZARTOVA, Department of Physics, Stockholm University, A. TRZCINSKA, Heavy Ion Laboratory, Warsaw University, H. GEISSEL, G. MUNZENBERG, YU.A. LITVINOV, H. WEICK, GSI, A. GILLITZER, Institut fuer Kernphysik, Forschungszentrum, Juelich, S214 COLLABORATION — S214 experment is scheduled in July, 2005 at GSI. The goal of this experiment is to study properties of eta bound to nuclei. Recently S160 group succeeded in searching for the bound states of π^- to the nuclei at GSI. The local part of the π- nucleus optical potential parameters was determined through the detailed analysis. The determined potential is translated to the effective π mass in nuclear matter. For better understanding of the meson properties in nuclear medium systematically, we study eta-nucleus bound states. This experimental search is challenging due to the small signal cross section ($\sim$ 1 Hz) and the large background ($\sim 10^8$ Hz). We develop a new type high resolution Cherenkov detector, TORCH, to overcome these difficulties. In this talk, we will report the latest result of an analysis.

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