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Study of ϕ mass modification with K^+K^- decay in p+A collisions at J-PARC

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We are proposing an experiment to study ϕ mass modification through K^+K^- decay in p+A collisions at J-PARC. We expect to obtain several hundred thousands of $\phi \rightarrow K^+K^-$ decays in p+C and p+Cu collisions with 30 GeV proton beams. The ϕ mass modification is sensitive not only to the K^+K^- modification but also to the branching ratio due to the small Q value. In this presentation, we discuss the physics of ϕ in nucleus, the design of the experiment, and the R&D status and plan of the kaon identification detectors.

Author: Dr SAKO, Hiroyuki

Co-authors: Dr SATO, Susumu (Japan Atomic Energy Agency (JP)); MIAKE, Yasuo (University of Tsukuba (JP)); INABA, Motoi (Tsukuba University of Technology (JP)); Mr KYAN, Shono (University of Tsukuba); OZAWA, Kyoichiro (High Energy Research Institute, KEK); ESUMI, Shinichi (University of Tsukuba (JP)); NONAKA, Toshihiro (University of Tsukuba); CHUJO, Tatsuya (University of Tsukuba (JP))

Presenter: Dr SATO, Susumu (Japan Atomic Energy Agency (JP))

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