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Exploring new physics chance with antideuteron beam at J-PARC [Remote talk]

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Antimatter has held a significant position in both the scientific community and popular culture for many years. It has captured attention ranging from testing CPT violation to its portrayal in Hollywood movies. Numerous investigations into antiproton and its interaction with matter have been undertaken. However, the antinuclei composed of multiple antinucleons, such as the antideuteron, remain relatively unexplored territory.

In this talk, I will present our recent plan to explore new physics chance by utilizing the antideuteron beam at the K1.8 beam line of J-PARC. Based on the GiBUU calculation, we propose to measure the optical potential between antideuteron and Carbon nucleus; further more, we will examine the annihilation mechanism between multiple antinucleons and nucleons.

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Track Classification: Nuclear and Hadronic Physics with antiprotons and antineutrons