

Abstract Submitted
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Photoassociation spectroscopy of ^{174}Yb Bose-Einstein Condensate using the $^1\text{S}_0 \leftrightarrow ^3\text{P}_1$ transition¹ JONGCHUL MUN, JEONGWON LEE, JAE HOON LEE, KRISS, MIN-SEOK KIM, YONG-IL SHIN, Seoul National University — We studied the photoassociation spectrum of ^{174}Yb Bose-Einstein condensate (BEC) using an optical Feshbach resonance near the intercombination transition ($^1\text{S}_0 - ^3\text{P}_1$, 578 nm). The optical length l_{opt} , which characterizes the interaction strength of optical Feshbach resonances, of four least-bound molecular levels ($\nu = -1 \sim -4$) were precisely determined by measuring the two-body loss rate at various optical powers. We also found the parameter $\eta = \Gamma_{spont}/\Gamma_{mol}$, which characterizes the enhancement of molecular loss, to be > 1 as in the previous studies[1,2]. Our BEC apparatus and experimental scheme are also introduced in this presentation.

[1] Phys. Rev. Lett. 107, 073202 (2011)

[2] Phys. Rev. Lett. 110, 123201 (2013)

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