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Photoassociation spectroscopy of a degenerate Fermi gas of ^{173}Yb atoms¹ JEONG HO HAN, JIN HYOUN KANG, MOOSONG LEE, YONG-IL SHIN, Department of Physics and Astronomy and Institute of Applied Physics, Seoul National University — We report photoassociation (PA) spectroscopy of ultracold ^{173}Yb fermions near dissociation limit with dipole-forbidden intercombination transition. The photoassociative spectrum is measured with red-detuned lasers over a scan range up to 1GHz with respect to the $F=5/2 \rightarrow F'=7/2$ atomic resonance. Because of the high nuclear spin ($I=5/2$) nature of the system, we observe a complicated structure appears with several vibrational series each following the LeRoy-Bernstein progression. We compare our results with a numerical calculation based on a single channel Movre-Pichler model. We also investigate the magnetic field dependence of the photoassociation spectrum.

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