

Abstract Submitted
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Hyperfine Structure in the $^{87}\text{Rb}_2$ 1_g State Below $5^2S + 5^2P_{1/2}$ T. BERGEMAN, SUNY Stony Brook, E. TIESINGA, P.S. JULIENNE, NIST, C.-C. TSAI, National ChengKung U., Taiwan, D. HEINZEN, U. Texas, Austin — Hyperfine structure in the Rb_2 $1_gP_{1/2}$ state was observed in photoassociation from cold atoms some time ago, but only partially analyzed. Our Hamiltonian includes the vibrational energy, $G(v)$, rotational energy, $B(v)$, hyperfine interaction, $A(v)\iota$, and off-diagonal elements $F_{\pm} \cdot I_{mp}$. F ranges from 1 to 6, ι from $-I$ to I , where $I=3$. The data scans were precisely calibrated by simultaneously etalon scans. For the 22 vibrational levels (over a range of 50) for which there is precise data, $A(v)$ varies from $2.97 \times 10^{-2} \text{ cm}^{-1}$ to $3.15 \times 10^{-2} \text{ cm}^{-1}$. The $G(v)$ and $B(v)$ values allow us to construct a potential down to 32 cm^{-1} below the dissociation limit.

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