

Abstract Submitted  
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**Optically pumped Rb atoms in warm cell for photon frequency conversion** MICHAŁ J. PIOTROWICZ, JOHN F. REINTJES, KeyW Corporation, ADAM T. BLACK, U.S. Naval Research Laboratory, ALEX KUZMICH, University of Michigan, MARK BASHKANSKY, U.S. Naval Research Laboratory — We have investigated optical pumping of Rb-87 atoms to  $F = 2$ ,  $m_F = 2$  state in warm vapor cell. We present the influence of buffer gas and temperature of the cell on the pumping efficiency and preservation of the state. The optically pumped atoms are used to convert 795 nm photons to telecom wavelength in a four wave mixing process. Population transfer of atoms to one  $m_F$  state increases the optical depth of the sample for conversion process as well as reduces the noise photons.

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