

Abstract Submitted  
for the 4CF09 Meeting of  
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**The Doubling of 846 nm Light to Produce 423 nm Light for use in Atom Interferometry**<sup>1</sup> JAMES ARCHIBALD, BYU, JEREMEY BIRRELL, REBECCA TANG, CHRIS ERICKSON, LANDON GOGGINS, DALLIN DURFEE — We present progress on a 423 nm fluorescence probe/cooling laser for use in our neutral calcium atom interferometer. The finished system will include an 846 nm diode laser that is coupled to a tapered amplifier. This light will be sent to a buildup cavity where we will achieve second-harmonic generation (SHG) using either a BBO non-linear crystal or a periodically-poled KTP crystal. We will discuss the theoretical considerations relating to the doubling of light in a crystal and the construction of our buildup cavity. We will also discuss its proposed application for use in atom interferometry.

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