

Abstract Submitted  
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**Frequency-comb based spectroscopy of the Yb I 399 nm transition**<sup>1</sup> QUINTON MCKNIGHT, Brigham Young University, MICHAELA KLEINERT, Willamette University, SCOTT BERGESON, Brigham Young University — We determine the frequency of the Yb I  $^1S_0 - ^1P_1$  transition at 399 nm using an optical frequency comb. Although this transition was measured previously using an optical transfer cavity [D. Das et al., Phys. Rev. A 72, 032506 (2005)], recent work has uncovered significant errors in that method. We compare our result with those from the literature and discuss observed differences. We verify the correctness of our method by measuring the frequencies of well-known transitions in Rb and Cs, and by demonstrating proper control of systematic errors in both laser metrology and atomic spectroscopy. We also demonstrate the effect of quantum interference due to hyperfine structure in a divalent atomic system and present isotope shift measurements for all stable isotopes.

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