

Abstract Submitted  
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**Non-linear Optical Rotary Dispersion of Crystalline NaClO<sub>3</sub> and NaBrO<sub>3</sub> and Uridine Solutions** ANDREW FISCHER, RICHARD PAGNI, ROBERT COMPTON, University of Tennessee, JINGGUO YANG, Sichuan University, Chengdu, China — Sodium chlorate (NaClO<sub>3</sub>) and sodium bromate (NaBrO<sub>3</sub>) form chiral crystals belonging to the P2<sub>1</sub>3 space group for which the same crystal structures exhibit *opposite* optical rotation. The uridine molecule is an inherently chiral molecule and has been studied in aqueous solutions. We report optical rotary dispersion (ORD) curves from 700-475 nm for both of the chiral crystals and uridine solutions using an OPO laser. The measured non-linear optical rotation for sodium chlorate and sodium bromate is found to increase with increasing light intensity over the range of 1064 to 532 nm. Changes in the optical rotation as a function of laser power (non-linear ORD, NL ORD) are measured using the fundamental (1064 nm) harmonics (532 nm, 355 nm) of a Nd:YAG laser . These results will be compared with the previously reported NL ORD studies [*Mol. Phys.* 1997 for uridine in H<sub>2</sub>O solutions in which the OR is reported to decrease with increasing laser intensity. For the limited data available, it appears that the NL ORD is determined by the OR at the dominant n-photon region.

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