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Orientation dependence of the ionization of CO and NO in an intense femtosecond two-color laser field[1] HUI LI, DIPANWITA RAY, SANKAR DE, WEI CAO, GUILLAUME LAURENT, ZHENHUA WANG, ANH THU LE, C. LEWIS COCKE, J.R. Macdonald Laboratory, Department of Physics, Kansas State University, IRINA ZNAKOVSKAYA, Max-Planck Institut for Quantenoptik, MATTHIAS KLING, Kansas State University and Max-Planck Institut for Quantenoptik — Two-color (800 nm and 400 nm) ultrashort (30±10 fs) laser pulses were used to ionize and dissociate CO and NO. The emission of C^{+q}, N^{+q} and O^{+} fragments were measured with a velocity-map-imaging (VMI) system. The data show that the ionization rate is dependent on the orientation of the molecules with respect to the laser polarization. Both molecules ionize more easily when the electric field points from C to O in CO and from N to O in NO. The asymmetry of emission is much higher for CO than for NO. The sign of the asymmetry is not strongly dependent on kinetic energy release (KER). The favored ionization orientation is in agreement with the expectation of the molecular orbital Ammosov-Delone-Krainov (MO-ADK) [1] theory and with a Stark-corrected version of a strong-field-approximation (SFA) calculation [2].

[1] X.M. Tong, et al., Phys. Rev. A **66**, 033402 (2002).
[2] H. Li, et al., Phys. Rev. A **84**, 043429 (2011).

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