

OZONE RECOVERY IN THE PRESENCE OF $O_2(a^1\Delta)$ FOR ATMOSPHERIC STUDIES

MICHAEL C. HEAVEN, *Department of Chemistry, Emory University, Atlanta, GA 30322*; VALERIY N. AZYAZOV, *P.N. Lebedev Physical Institute, Samara Branch, Samara, Russia, 443029*.

Rapid quenching of $O_2(a^1\Delta)$ in $O(^3P)/O_2/O_3$ mixtures has been observed using 248 nm laser photolysis of ozone to produce oxygen atoms and $O_2(a^1\Delta)$ molecules. Collisional removal of $O_2(a^1\Delta)$ was found to be correlated with the presence of O atoms. The kinetics indicate that vibrationally excited ozone is an important $O_2(a^1\Delta)$ quenching agent in $O(^3P)/O_2/O_3$ systems. The impact of this quenching channel on the $O_2(a^1\Delta)$ and O_3 levels in the atmosphere will be discussed.