

MEASUREMENTS OF N<sub>2</sub>- AND O<sub>2</sub>-PRESSURE-INDUCED BROADENING AND PRESSURE-INDUCED SHIFTS FOR <sup>16</sup>O<sup>12</sup>C<sup>32</sup>S TRANSITIONS IN THE  $\nu_3$  BAND

M.A. KOSHELEV, M.Yu. TRETYAKOV, *Institute of Applied Physics, Russian Academy of Sciences, Nizhni Novgorod, Russia 603950*; R.M. LEES, LI-HONG XU, *Department of Physical Sciences, University of New Brunswick, Saint John, NB, Canada E2L 4L5*.

Nitrogen and oxygen pressure-broadening and pressure-induced shift coefficients for 42 transitions of <sup>16</sup>O<sup>12</sup>C<sup>32</sup>S with quantum number  $m$  from -25 to 49 in the  $P$  and  $R$  branches of the  $\nu_3$  band at 2062 cm<sup>-1</sup> have been measured at room temperature using the UNB high-resolution tunable diode laser spectrometer. Significant dependence of the broadening coefficients on rotational quantum number is observed; the low- $m$  limits are approximately 0.110 and 0.097 cm<sup>-1</sup>/atm for N<sub>2</sub> and O<sub>2</sub> broadening, respectively, decreasing to 0.085 and 0.072 cm<sup>-1</sup>/atm by  $m = 50$ . Air-broadening and shift parameters have also been calculated from the N<sub>2</sub> and O<sub>2</sub> measurements. The results show good consistency with previous measurements for the  $\nu_1$  and  $2\nu_3$  bands but a slight deviation at high  $m$  from the coefficients for the  $\nu_3$  band reported in the GEISA and HITRAN databases.