LINESHAPE STUDIES OF ROTATIONAL TRANSITIONS OF OZONE AND NITRIC ACID

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In the framework of a contract provided by the European Space Agency, linewidth measurements have been performed on selected rotational lines of ozone and nitric acid, mostly located between 300 and 350 GHz, in the B and C bands of the MASTER platform. Broadening parameters have been determined for O_3 in collision with N_2 and O_2 at five different temperatures in the 190-300K range. For nitric acid, only air broadening coefficients were measured at 296K. The experiments have been performed at LMSB and PhLAM by using both different experimental set-ups and different analysis procedures. At PhLAM, the true lineshapes were observed with a video-type spectrometer and compared to Voigt and Galatry theoretical models. At LMSB, a Galatry model has been used to analyse the second derivative of the natural line profiles recorded with a frequency modulation spectrometer. Several lines of ozone and nitric acid were measured in both laboratories. The results of the intercomparison will be discussed.