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Differential cross sections for electron scattering from vibrationally excited linear triatomic molecules MIZUHA OHKAWA, DAISUKE SUZUKI, HIDETOSHI KATO, Sophia University, KAZUAKI NAGUMO, Tokyo University of Science, MASAMITSU HOSHINO, Sophia University, MICHAEL BRUNGER, Flinders University, HIROSHI TANAKA, Sophia University, SOPHIA UNIVERSITY TEAM, FLINDERS UNIVERSITY COLLABORATION — The study of electron scattering from atoms and molecules is significant for our understanding of many physical phenomena, for instance in plasma processes, astrophysics and so on. Therefore many studies on electron scattering processes have been conducted. However these studies are typically limited to elastic scattering and excitation from the ground state. In this study, we have thus measured excitation functions and angular distributions for superelastic and elastic scattering from the bending mode of vibrationally excited N_2O and CO_2. The experimental apparatus consists of a typical crossed-beam method in conjunction with the relative flow technique for normalization to an absolute scale. The gas of interest is heated to 800 K by resistive heating of the beam-forming nozzle. The electron impact energy range for both targets was $1 - 9$ eV, while the scattering angle range was $30° - 130°$. Resonance phenomena are clearly observed in our excitation function measurements, with a full summary of all our results being given at the meeting.

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