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The mass analysis of mixed H_2O, NH_3 and CO_2 ices induced by Ar^+ H_2^+, and H_3^+ projectiles

CHIN SHUANG LEE[1], YA CHUNG LIU[1], ROBERT WU[2] and WING IP[3]

[1]*Department of Physics, National Central University, Chungli, Taiwan 320*
[2]*Department of Physics, University of Southern California*
[3]*Institute of Astronomy, National Central University, Chungli, Taiwan 320*

Laboratory simulation results of the identification of sputtered particles produced via the ion irradiation of several ice systems relevant to the cometary-type ices and icy satellites of planetary systems are obtained. We have carried out measurements on mixed H O-CO ices, mixed H O-CO -NH ices and pure H O, CO and NH ices. A quadrupole mass spectrometer was utilized to identify the sputtered molecular species induced by the ion irradiation of the ice samples.