PRECISE THZ MEASUREMENTS OF HCO^+, N_2H^+ AND CF^+

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Herschel Space Observatory, Stratospheric Observatory for Infrared Astronomy (SOFIA), and Atacama Large Millimeter Array (ALMA) opened up the submillimeter-wave region of the electromagnetic spectrum by making astronomical investigations of unprecedented high sensitivity and angular resolution possible. Observations with these tools require the knowledge of transition frequencies in the frequency regions mentioned above with accuracies preferably better than 100 kHz. In view of this need, we have extended the investigation of the rotational spectra of HCO^+, N_2H^+ and CF^+ up to the THz region, thus improving the predictive capabilities at higher frequencies of the determined spectroscopic parameters.