Poster 016

Branching Ratio for C_3H_2 and $C_3H_2^+$ following electronic excitation

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Electronic Recombination (DR), Photo excitation, or collision with Cosmic Rays can electronically excite interstellar molecules. Following such process dissociation take place and may be of importance for the undergoing chemistry. Branching ratio of dissociation is in fact poorly known for most of the interstellar species. It is why we develop the Silicon multidetector, AGAT, nearby the Orsay Tandem Facility [1-2]. It is operating in inverse kinematics scheme - i.e. it use high velocity,500 Kev/u.m.a, molecular beams . It allows a complete detection of all BR following electronic excitation by High Velocity Collision (HVC).

Recently we compared results from HVC on C_n, C_n^+ ($n \leq 10$) and C_nH, C_nH^+ ($n \leq 4$) to those from photodissociation and DR [3-4]. Branching ratios was very similar and in good agreement with statistical behavior. In this poster, we will present our new results concerning C_3H_2 and $C_3H_2^+$ fragmentation. We will compare them to those obtained by Leonori [5] in Neutral-Neutral Dissociative Reactions.

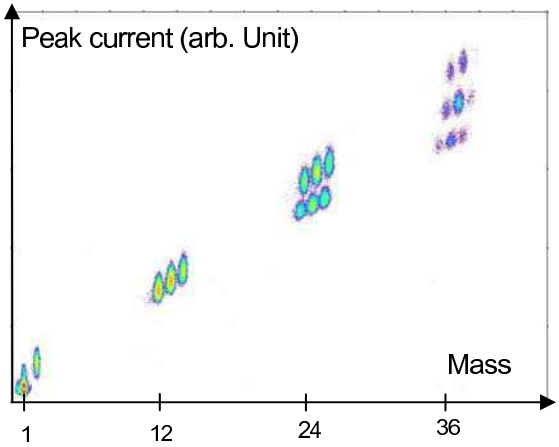

Figure 1: Bidimentional display of neutral detection events in $C_3H_2^+$ + He (4.5 u.a.) collision system. At each event, it corresponds one energy, labeled in mass on x – axis, and one peak current values from signal processing, in arbitrary unit on Y-axis. Starting from the low left corner we see H, H_2, then higher in mass C, CH, CH_2, then C_2 and on the top C/C, C_2H and C/CH, C_2H_2 and C/CH_2 and so on.

References

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