

Abstract Submitted
for the DAMOP06 Meeting of
The American Physical Society

Angular and High-Frequency Analysis of Interference Structures in Electron Emission Spectra from 60 MeV/u $\text{Kr}^{34+} + \text{H}_2$.¹ J.A. TANIS, Western Michigan Univ., J.-Y. CHESNEL, A. CASSIMI, J.-P. GRANDIN, L. ADOUI, D. HENNECART, GANIL, Caen, B. SULIK, ATOMKI, Debrecen, B. SKOGVALL, P. SOBOCINSKI, N. STOLTERFOHT, HMI-Berlin — New measurements of interference structures associated with electron emission have been made for 60 MeV/u $\text{Kr}^{34+} + \text{H}_2$ collisions to characterize the angular dependence of the primary interference structures over a wide range including backward ejection angles, and, additionally, to search for high-frequency structures as reported for 1-5 MeV/u $\text{H}^+ + \text{H}_2$ collisions.¹ Comparison of the data with several theories over the range 30° – 150° shows the theories to follow the trend of the data but underestimate the measured oscillation frequencies by as much as 50% for backward angles. High-statistics measurements of electron spectra for 90° and 150° were subjected to Fourier analysis to determine if components corresponding to high-frequencies exist in the inverse spectrum but no evidence was found, in contrast to the results reported for $\text{H}^+ + \text{H}_2$. ¹S. Hossain *et al.*, Phys. Rev. A **72**, 010701(R) (2005)..

¹Supported by German-French PROCOPE, Hungarian OTKA, and German-Hung. S&T Collab.

J.A. Tanis
Western Michigan Univ.

Date submitted: 25 Jan 2006

Electronic form version 1.4