

Abstract Submitted  
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**Electron-impact dissociative excitation and ionization of dihydride cations  $\text{XH}_2^+$  ( $\text{X}=\text{B}, \text{C}, \text{N}, \text{O}, \text{F}$ )** MICHAEL FOGLE, Auburn University, MARK BANNISTER, RANDY VANE, ERIC BAHATI, Oak Ridge National Laboratory, Physics Division, RICHARD THOMAS, VITALI ZHAUNERCHYK, Stockholm University, Sweden — Absolute cross sections for electron-impact dissociation of  $\text{XH}_2^+$  ( $\text{X}=\text{B}, \text{C}, \text{N}, \text{O}, \text{F}$ ) cations forming  $\text{XH}^+$  and  $\text{X}^+$  ion fragments were measured in the 3-100 eV range using a crossed electron-ion beams technique at Oak Ridge National Laboratory. This electron energy range covers both dissociative excitation and ionization of these species. Large, resonant-type contributions are observed in the dissociative excitation channels of  $\text{CH}_2^+ \rightarrow \text{CH}^+$  and  $\text{BH}_2^+ \rightarrow \text{BH}^+$ , however, the other species do not exhibit such an enhancement to the dissociative excitation cross sections.

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