

Abstract Submitted
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Elastic and Vibrational Cross Sections in Methane and Cyclopropane MICHAEL ALLAN, University of Fribourg — There is a general agreement about the elastic cross sections in methane in the literature, but substantial discrepancies exist about the vibrational cross sections. This work measures absolute differential elastic and vibrational cross sections from nearly threshold to 20 eV. The cross sections are measured over a large angular range using the magnetic angle changer. All four vibrations are resolved at low energies. Earlier relative measurements {(M. Allan and L. Andrić, *J. Chem. Phys.* **105**, 3559 (1996))} have revealed large differences in the shapes of the cross sections in propane and cyclopropane due to an $l = 3$ shape resonance made possible by the C_3 axis in cyclopropane. The present work extends the existing measurements and presents absolute cross sections.

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