

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.

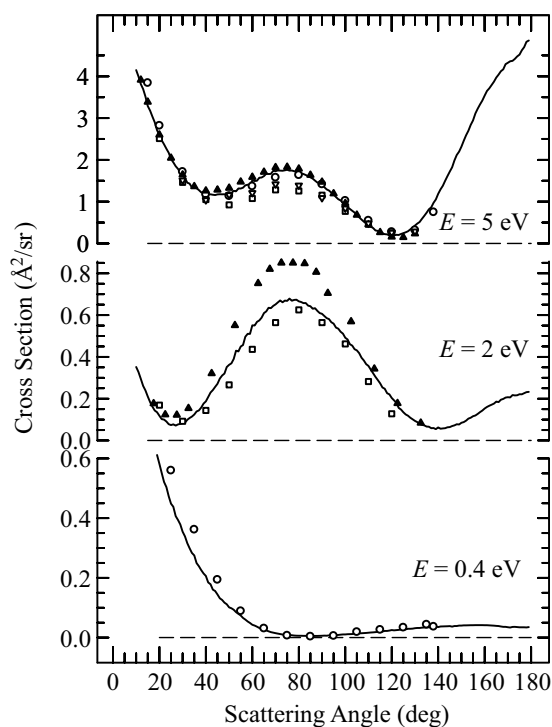


Fig. 1. Elastic cross sections in methane. Circles show the data of Sohn *et al.* [2], Squares of Rohr [3], black triangles of Bundschu *et al.* [1], white triangles of Tanaka *et al.* [4]

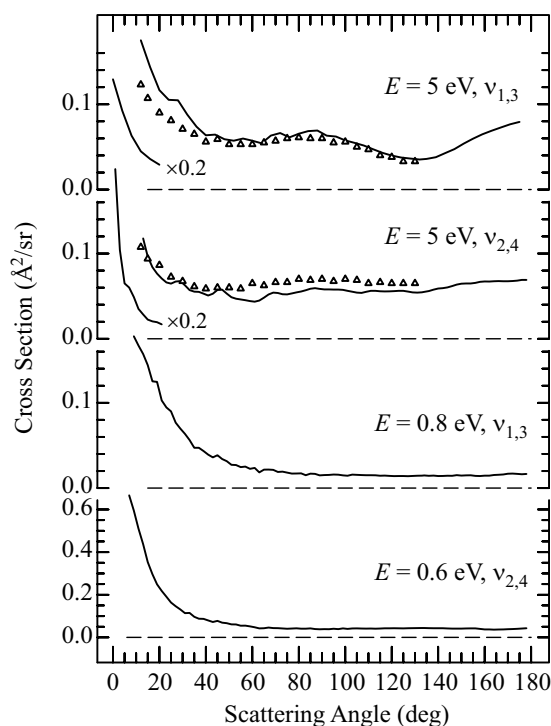


Fig. 2. Vibrational excitation cross sections in methane. Triangles show the data of Bundschu *et al.* [1].

References

- [1] Bundschu C T, Gibson J C, Gulley R J, Brunger M J, Buckman S J, Sanna N and Gianturco F A 1997 *J. Phys. B* **30** 2239
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- [5] Nishimura T and Gianturco F A 2002 *J. Phys. B* **35** 2873