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Low-energy electron interactions with water and methanol

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Interactions of electrons with small, highly polar molecules form a crucial basis for understanding cellular damage caused during radiation therapy of cancers. Recent studies of elastic scattering from water by Khakoo *et al.* [1], and electronically inelastic scattering by Thorn *et al.* [2], have revealed serious discrepancies between experimental and theoretical determinations of the cross sections for these processes, and in some cases even between experimental values. In this presentation, new data for both elastic and electronic excitation of water are presented which aim to resolve some of these discrepancies. We will also consider excitation cross sections for a more complicated target, methanol. The measured methanol data are the first such data reported.

[1] M.A. Khakoo *et al.*, *Phys. Rev. A*, **78**, 052710 (2010)

[2] P.A. Thorn *et al.*, *J. Phys. B: At. Mol. Phys.*, **40**, 697 (2007)