

Abstract Submitted
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A universal formula for the accurate calculation of hydrogenic lifetimes M.W. HORBATSCH, M. HORBATSCH, E.A. HESSELS, York University
— The quantum mechanical lifetimes of atomic hydrogenic states are shown to follow a universal curve when plotted against a simple function of their quantum numbers n and l . This universal curve is found to agree with a result derived from the correspondence principle. A simple formula which approximates the universal curve can be used to easily calculate lifetimes for all states $n, l \geq 1$ to an accuracy of 400 parts per million or better. The formula is especially useful for high- n states, where the full quantum calculation is extremely difficult or even impossible to perform.

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