

Abstract Submitted  
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**Variable Differential Cross Section Due to Nuclear Motion** STEW-  
ART BREKKE, Northeastern Illinois University (fmr grad student) — The standard  
differential cross section formula assumes a motionless massive point nucleus. How-  
ever, nuclear oscillation is a reality, changing the position of the impact parameter in  
relation to the incoming beam of particles or ions thereby affecting the cross section.  
If the static differential cross section is  $d\sigma/d\Omega = (Ze^2 \csc^2 \theta / 8\pi\epsilon_0 T)^2$ , an oscillator  
can be added to the formula describing the movement of the cross section so that the  
resulting formula for differential cross section is  $(Ze^2 \csc^2 \theta / 2 / 8\pi\epsilon_0 T)^2 (A_x \cos \alpha i +$   
 $A_y \cos \beta j + A_z \cos \gamma k)$ . By taking in ot account nuclear motion there will be some  
reconciliation between experimental and theoretical values.

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