

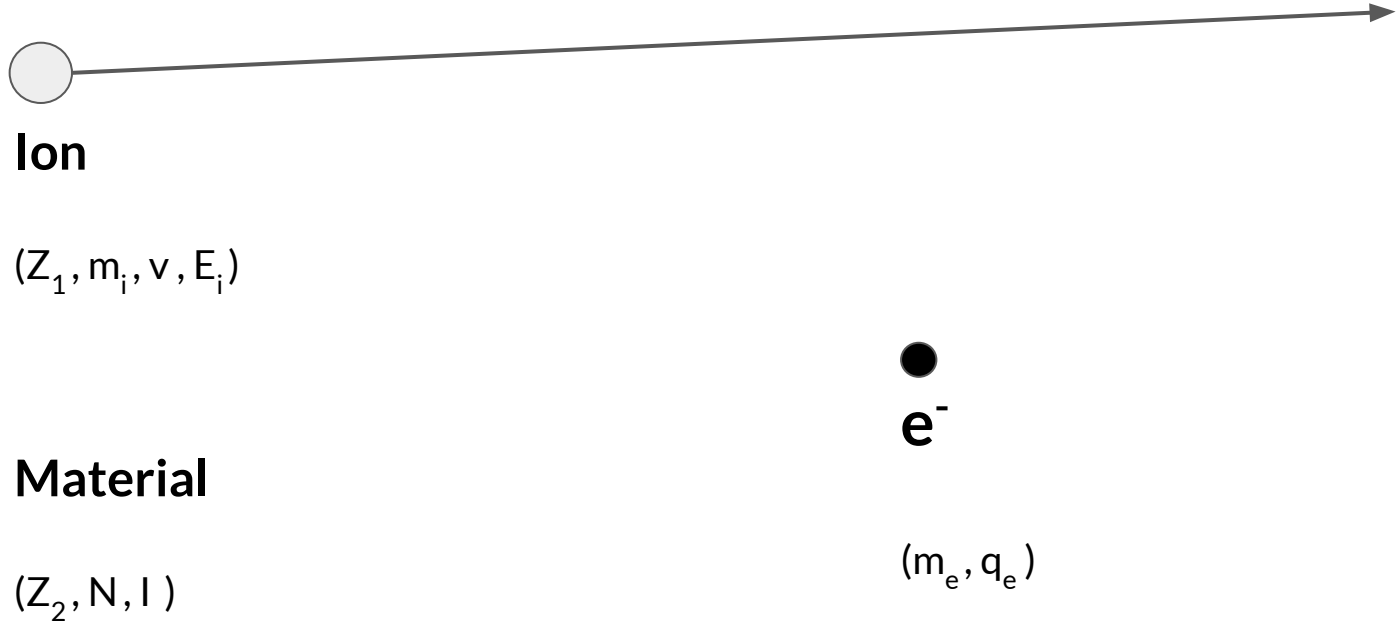
# 22.01 - Recitation #8

- Please grab a snack, get up off the sofa, look at something that isn't a screen for 5 mins!
- Please turn on your video (if possible) and mute yourself.
- These slides are at:  
[bit.ly/2201Rec8](https://bit.ly/2201Rec8)

# Outline + Intended Learning Outcomes (ILOs)

- Electronic Stopping Power
- Nuclear Stopping Power
- Range of charged particles
- Recall the contributions to electronic stopping power.
- Determine the units of the Coulomb constant.
- Understand the dependency of stopping power on energy.
- Recall the differences between electronic and nuclear stopping power.
- Understand why we care about the range of charged particles.

# Electronic stopping power of charged particles

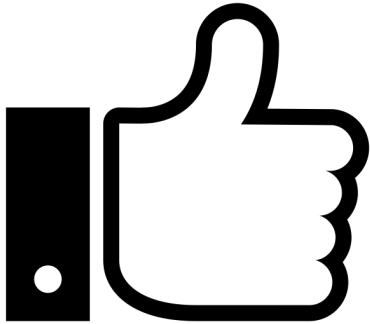


# Electronic stopping power of charged particles

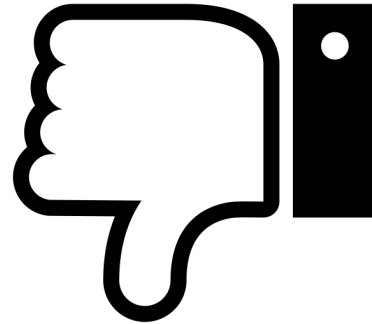
$$-\frac{dT}{dx} = \frac{4\pi k_0^2 N Z_1^2 Z_2 e_c^4}{m_e v^2} \ln \left( \frac{2m_e v^2}{\bar{I}} \right)$$



# Will Charlie's iPad work?



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from Noun Project

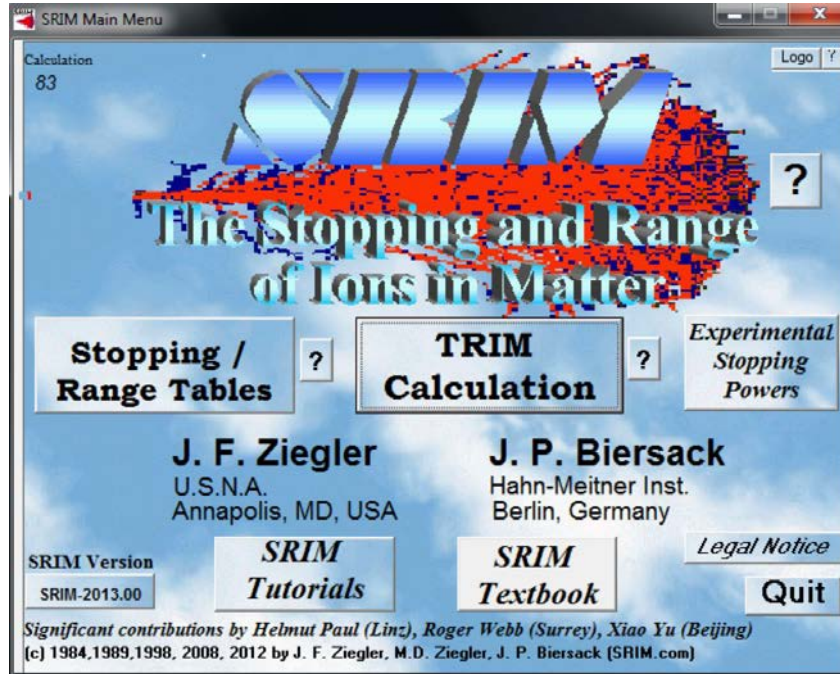


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# Range of charged particles

$$R = \int_0^{E_i} - \left( \frac{dT}{dx} \right)_{\text{total}}^{-1}$$

# Range of charged particles



# 22.01 - Recitation #8 - October 23rd 2020

Office Hours 8.15-9am Monday

Office Hours **1-2pm** Monday

Questions?

Please grab a snack, get up off the sofa, look at something that isn't a screen for ~X mins!



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## 22.01 Introduction to Nuclear Engineering and Ionizing Radiation

Spring 2024

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