Program Installation

- SRIM webpage → www.SRIM.org

- You will find all information about the program: function, theory and link to download

- Download SRIM 2008 (or SRIM 2011 - beta)

- Tip for SRIM 2008 and Windows Vista (probably also Windows 7):

  – Vista: SRIM doesn't run properly if you install it in C:

  – you don't have permission to add Output files in C:

  – copy a folder with the installation to the desktop
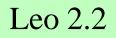
Report

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- **<u>Report</u>**:
  - ➢ Language: Swedish/English
  - ➢ Short theoretical introduction
  - ➢ Results: What did you do?

    What did you get?
  - ➢ Conclusion

- **Hand in no later than December 9th**

The passage of charged particles through matter can produce:

- Inelastic collisions with the atomic electrons of the material
- Elastic scattering from nuclei
  - Emission of Cherenkov radiation
  - Nuclear reactions
  - Bremsstrahlung

Effects observed:

- Energy loss
- Deflection from incident direction

Leo 2.2

Basic definitions

- **<u>Stopping power</u>**: Average energy loss per unit path length
  - ➤ Bethe-Bloch formula: Quantum mechanical calculation of energy loss (Leo 2.2.2)
  - ➤ Bragg curve: Shows variation of dE/dx as a function of the penetration depth of the particle in matter ➜ More energy will be deposited at the end of the path (Leo 2.2.3)

- **<u>Range</u>**: Distance travelled by the particle before it loses all its energy (Leo 2.2.9)
  - ➤ Energy loss is not continuous
    - ➜ Range **<u>straggling</u>**