

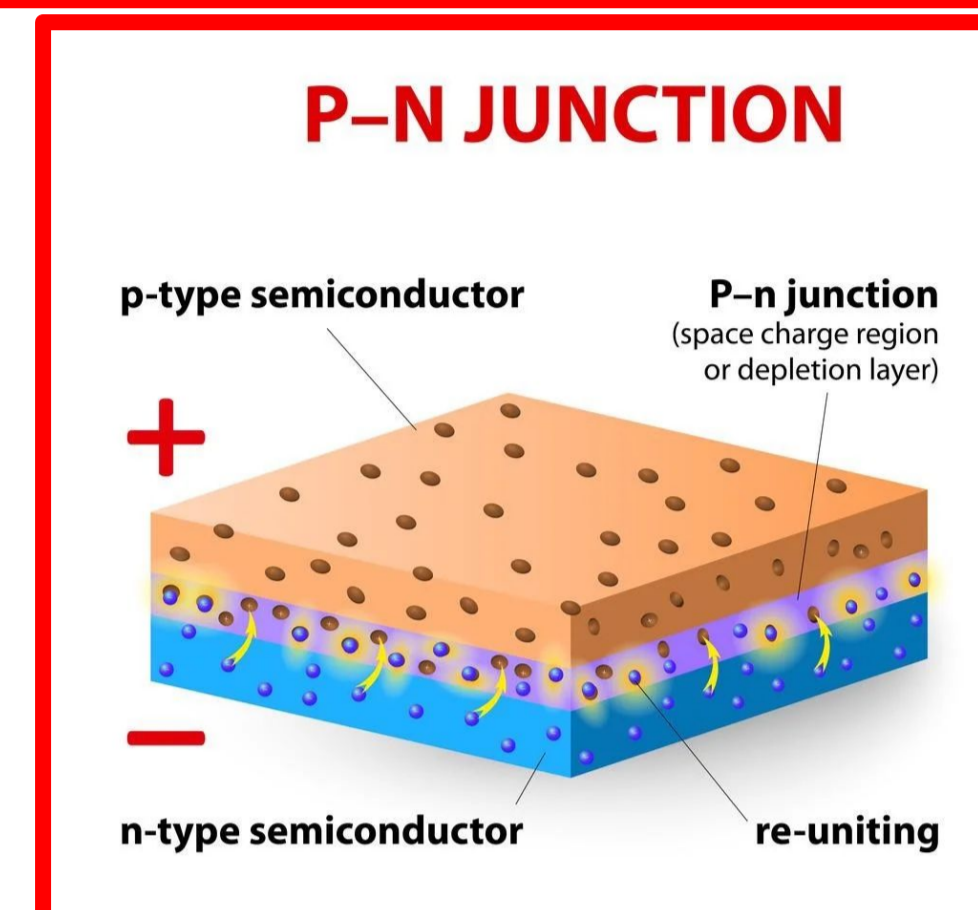
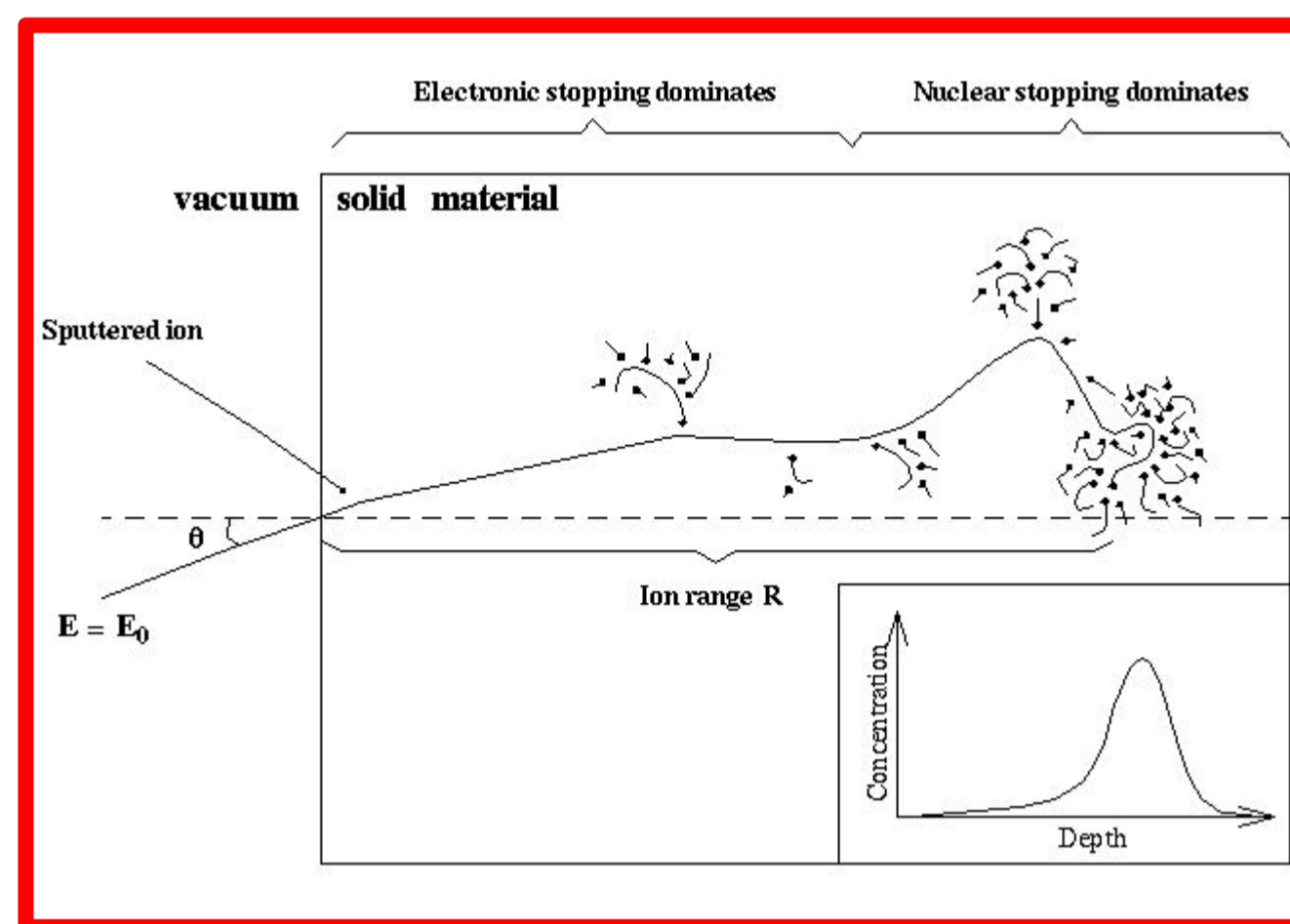
Towards a Machine Learning Prediction of Electronic Stopping Power

Abstract

The prediction of Electronic Stopping Power for general ions and targets is a problem that lacks a closed-form solution. While full approximate solutions from first principles exist for certain cases, the most general model in use is a pseudo-empirical model. This paper presents our advances towards creating predictive models that leverage state-of-the-art Machine Learning techniques. A key component of our approach is the training data selection. We show results that outperform or are on par with the current best pseudo-empirical Stopping Power model as quantified by the Mean Absolute Percentage Error metric.

What is stopping power? Why is it interesting?

Stopping Power is the dissipation of energy an ion projectile suffers when launched against a material.



Data cleaning

The monoatomic case
