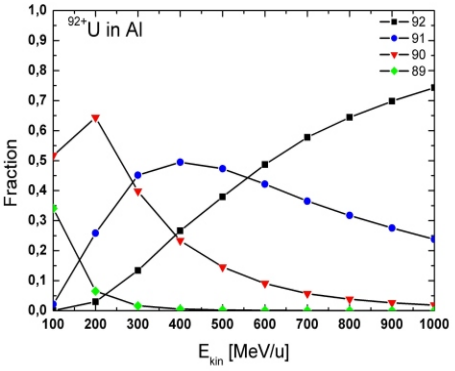
II. Physikalisches Institut

Research Group Prof. Geissel

Diploma/Ph. D. Thesis in Experimental Physics
Study of Atomic Interaction of Heavy Ions with Matter

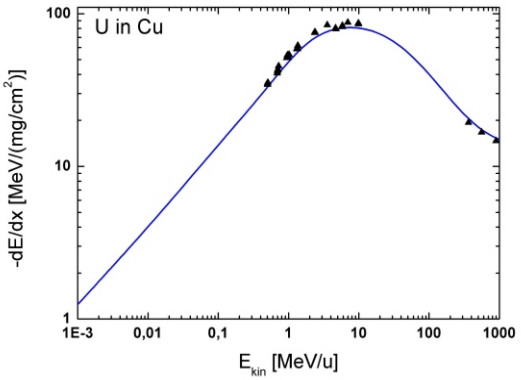
The atomic interaction of heavy-ions with matter is created by numerous scattering and charge-exchange processes. Making an exact theoretical description of the problem is still a great challenge today. Only with the support of exact measurements theory of atomic interaction can be improved. At lower energies the population of many different charge-states is a vast complication of the problem for theoreticians. Measurements of charge-exchange during energy-loss measurements in new projectile-energy areas with ions will lead to a better understanding of the interaction.



The study of slowing down of heavy ions has great potential to be used in other fields for example, radiation therapy and in detectors for particle identification (nuclear physics and astrophysics).

Work Areas During the Thesis:

- **Experimental setup, doing experiments and analysis of the results at the GSI (Germany)**
- **Improvement of theories and implementation into computer programs (ATIMA, GLOBAL)**
- **An experimental challenge will be the slowing down of short-lived exotic nuclei, because this feature is a goal for the new future project facility at GSI (Germany)**



Requirements:

- **Vordiplom or Master in Physics**
- **Enjoying experimental work**

For more information please contact:

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http://www.physik.uni-giessen.de/geissel/ionas.html