

Institutsseminar

From Heavy Elements to Peptides: Dynamics, Kinetics, and Thermochemistry

Prof. Peter B. Armentrout

**Department of Chemistry, University of Utah, Salt Lake City,
UT, USA**

In this presentation, I will review recent studies that utilize guided ion beam tandem mass spectrometry to examine the kinetic energy dependence of ion-molecule reactions. Two general areas of research will be included: heavy elements and peptides. Our studies of molecules containing actinide or lanthanide elements yield bond energies that act as benchmarks for theoretical studies. Lanthanide oxides are of particular interest to the United States Air Force for atmospheric applications. In addition to this small molecule work, the same techniques can be applied to the fragmentation of peptides. The talk will include recent work studying the deamidation of asparagine containing peptides, a process believed to be one of the fastest degradations occurring in proteins, and therefore linked to aging and the onset of neurodegenerative diseases. Our most recent work includes the determination of the absolute energy difference between conformers of protonated GlyProGlyGly, the first experimental determination of conformer energetics.

HSB 2

13:45 Uhr

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