



Electrodynamical trapping – A tool for gas phase and surface studies

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RF quadrupole traps are widely used to store ions over long periods of time. In this way trapping is a versatile tool for studying the kinetics and dynamics of ion molecule collisions. Higher order multipole traps are used in our laboratory to perform studies at low temperatures and low densities, an environment which plays an important role for the formation of molecules in the interstellar medium. Combination with laser techniques open up a new method of very sensitive spectroscopy and kinetics.

Electrodynamical trapping can also be used to store even macroscopic bodies. In the second part of the talk I will present a technique which allows for a non-destructive, high-resolution mass spectrometry of small dust particles. To date the precision is sufficient to record the adsorption or desorption of molecules from a submicron sized surface with sub-monolayer resolution.