



## **Experiment for the investigation of photoemission from dust grains**

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Photoelectric effect is well known for many years and several theories describing emission of electrons due to a photon impact have been developed in course of the years. Since dust grains in the space are permanently illuminated by solar or stellar UV radiations, their charging due to photoemission is of a great interest. However, the present theories are generally limited to large planar metallic surfaces, thus an experimental investigation is required for an estimation of the effects connected with limited dimensions and/or with insulating material.

We have developed the experimental set-up for the study of aforementioned effects. The experiment is based on a levitation of a single dust grain inside the electrodynamic trap. We plan to hold the grain inside the trap for a long (ten of hours) time to illuminate it with the UV source (20 or 40 eV) and to measure its charge. The goal of these measurements is the investigation of photoemission from highly curved insulating surfaces. However, the grain can be simultaneously illuminated with electron and ion beams and thus the space condition can be simulated. This simulation will provide basic data for estimation of the dust charge in interplanetary space or on the Moon surface.