



## **Temperature Dependence of the Particle Diffusion Coefficient in Dust Grains**

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During the interaction of ions/neutrals with dust grains, some of the particles are implanted into the grain and, as a consequence, the density gradient induces their diffusion toward the grain surface. Their release can cause a transport of these particles over large distances in space.

In our laboratory experiment, measurements of the diffusion coefficient of the particles implanted into the dust grain are carried out in an electrodynamic quadrupole trap. Although experimental setup does not allow an assessment of the dust grain temperature, it can be modified (e.g., by changing thermal radiation from the surrounding walls, laser irradiation, etc.). We present an upgraded laboratory set-up and the resulting temperature dependence of diffusion coefficient estimations and discuss implications for the space dust.