Transport of the charged dust grains to the galactic halo

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Using 3D MHD simulations we investigate the effect of the dust grains transport from galactic disc to the halo. Our models are based on the simulations of multiple SN explosions in the magnetized gaseous disc, which is submerged into the galactic gravitational potential. The dynamics of dust grains was simulated as a dynamics of particles in cells with taking into account gas-to-dust drag forces, radiation pressure on the dust grains from stellar disc and Lorenz forces. Initially, the dust swept out from the disc by the expanding SN shells. Later dust is accelerated by the radiation pressure when shells density drops down below the critical value. This value depends on the gas density of disc and the time distribution of SN explosions. We have found that regular magnetic fields play the decisive role in the accelerating of the charged dust grains at altitudes larger than 2-3 kpc. At the same time small scale perturbations of magnetic field generate dense dust condensations at different distances.