

## Interpretation of photopolarimetric observations of bright jets of comet C/1995 O1 (Hale-Bopp).

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Polarimetry of bright jets of comet C/1995 O1 (Hale-Bopp) carried out at a phase angle 19.6 degree showed that the degree of linear polarization is visibly higher than in the rest of the coma and it rapidly decreases with distance from the cometary nucleus. At distances 3000-4000 km the polarization of jets recedes to background level. Simultaneous photometry reveals the intensity of jets depends weakly on distance and jets are still bright at distances up to 25000 km. In order to interpret this photopolarimetric observation we study the influence of ice sublimation on the scattering of light by dust particles. As model particles we consider agglomerates consisting of two and three small grains of irregular shape. Two kinds of grains are considered: grains of pure silicate (refractive index  $m=1.66+0.0028i$ ) and grains of a silicate core and an organic mantle ( $m=1.5+0.1i$ ) with the volume ratio of silicate to organic material being unity. The agglomerates are covered by icy shell ( $m=1.313+0i$ ) where the volume ratio of grains to icy shell is set 1:2 for silicate grains and 1:1 for core-mantle grains. In addition, we considered two scenarios of ice sublimation: that does not change structure of original agglomerate and that leads to its disruption on single grains. We found that in some cases the sublimation of ice reproduces qualitatively the changing in intensity and polarization of cometary jets.