

## Motion of silicate particles in protoplanetary disk

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Forsterites are crystallized by annealing of amorphous precursors ( $\sim 1000$  K) or sublimation and recondensation ( $\sim 1400$  K) in inner protoplanetary disk. On the other hand, the observation showed that comets include crystalline forsterites. Therefore, there must be some mechanism that transports them from the inner area to the outer area in the disk. In this study, we investigate the motion of dusts in steady protoplanetary disk, considering that dusts stick to icy pebbles. From the result, we discuss the dependence of surface density of silicate dusts on the distance from the central star and compare a calculation result of the ratio of crystallized silicates to amorphous precursors to the observation result of comets.