

## **Modeling Cometary Dust as a Mixture of Compact and Aggregate Particles: An Application to Comet Levy 1990XX**

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In the present work, we model cometary dust as a mixture of compact and aggregate particles. Aggregates correspond to Ballistic Cluster-Cluster Aggregate (BCCA) and compact particles correspond to polydisperse spheroids with different aspect ratio. In order to understand the optical characteristics of cometary dust, the calculation is done for the wide range of particle sizes, different mixing ratio of compact and aggregates and for different compositions (silicates, carbonaceous materials etc). We then try to explain the observed polarization characteristics of comet Levy 1990XX at  $\lambda = 0.485\mu\text{m}$ . Our model successfully explains the positive part as well as the negative polarization curves at the above wavelength.

Key words : comets: general; dust; extinction; scattering; polarization; aggregates.