

# Prediction of observational results of fluffy aggregations in protoplanetary disks

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The dust growth and settling is the first step in planet formation. In this phase, the dust, which initially has the interstellar population, grows in size or mass by collisional coalescence and evolves to planetesimals in protoplanetary disks. However, some problems such as radial drift and fragmentation of dust particles have been pointed out, which prevent the formation of planetesimals. These are critical issues in the dust growth and settling theory. Okuzumi et al. 2012 performed numerical simulations of fluffy aggregation of the dust existing outside the snow line in the minimum mass solar nebula. They found that high porous aggregation in the disks cause a rapid collisional growth, which overcomes the radial drift. It should be interesting and important to reproduce the observational results to justify and improve the proposed theoretical models. In order for this, we have performed radiative transfer calculations of their fluffy aggregation models. In our presentation, the results of the spectral energy distribution and the images in the infrared and millimetre waves are presented. We also discuss how the region where planetesimals form can be detected in the model images and SEDs.