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A Shock Heating Model for Chondrule Formation: on the effect of kinetic evaporation

Hitoshi Miura[1], Taishi Nakamoto[2], Akira Iida[3], Hajime Susa[4]

[1] Astrophysical Sci., Tsukuba Univ, [2] CCP, Univ Tsukuba, [3] Graduate School of Science and Technology, Kobe Univ., [4] CCP, University of Tsukuba

It is considered that a shock heating model is one of the most plausible models for chondrule formation. But, in previous work, only evaporation at the boiling point was taken into account as the evaporation phenomenon. In order to improve this model, we estimated the evaporation rate at the temperature lower than the boiling point using the molecular dynamics and carried out numerical calculations. We found that evaporated volume of a dust particle is almost the same with the volume estimated by the previous model, if the dust evaporates almost completely. This result indicates that the kinetic evaporation does not change the criterion of complete evaporation of a dust particle considerably.