An Origin of Supersonic Motions in Interstellar Clouds
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abstract The propagation of a shock wave into an interstellar medium is investigated by two-dimensional numerical hydrodynamic calculation with cooling, heating and thermal conduction. We present results of the high-resolution two-dimensional calculations to follow the fragmentation due to the thermal instability in a shock-compressed layer. We find that geometrically thin cooling layer behind the shock front fragments into small cloudlets. The cloudlets have supersonic velocity dispersion in the warm neutral medium in which the fragments are embedded as cold condensations. The fragments tend to coalesce and become larger clouds.