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# Videosonde observation of torrential rain during Baiu season

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## Abstract

Water accumulation processes producing torrential rain over the southern part of Kyushu Island, Japan during Baiu season have been investigated. The cloud systems involved rain cells that became stationary over Kagoshima City and increased in height. Small, new cells subsequently developed upwind or to the side of the stationary cell and merged with it. Heavy rain was recorded as each cell merged.

Data from videosonde ascents in the merging cells showed many large graupel in a narrow area of the cloud just above the freezing level. It is suggested that the intense accumulation of water near that level is produced by the rapid growth of graupel through the capture of supercooled drops transported from the merging cell.

Cold dome formation is suggested as the reason for the sudden cessation of cell movement observed in many instances of heavy rain.



## Keywords

Precipitation mechanism; Heavy rain; Rain accumulation; Cell merging; Baiu heavy rain; Videosonde observation

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