

RAINDROP GROWTH AND TERMINAL VELOCITY

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ABSTRACT

This research contains two parts. The first part concentrates on analyzing the accuracy of the empirical equations of the drop terminal velocity developed by the author. After comparing the equation with eight other different empirical equations and the experimental data, the V_2 equation is found to have reasonable accuracy and has the tendency to generate constant terminal velocity for large-sized drops.

The second part is resulted from the raindrop growth simulation by the continuous growth model. The results suggest that the estimation of the drop terminal velocity has significant impact on the behavior of the drop growth. The differences appear mainly in the rainfall starting time and the rainfall period, which has at least 10-20 min difference. Since the life cycle of cloud is about 1 hr, 10-20 min error represents 15% simulation error.



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