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## Dense Fog Burst Reinforcement over Eastern China

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Fog can be hazardous weather. Dense and polluted fog is especially known to impact transportation, air quality, and public health. Low visibilities on fog days threaten the safety of air, sea and land traffic, especially in strong dense fog (SDF) and extremely dense fog (EDF), which is the most likely to cause accidents such as car rear-end collisions and ship collisions. Throughout more than ten years of observations, strong dense fog (SDF) (visibility less than 200m) and extremely dense fog (EDF) (visibility less than 50m) often occurred in the central and eastern regions of China. This could lead to serious traffic accidents.

This research summarizes the research results of dense fog in China, including the burst reinforcement features of strong dense fog (SDF) formation, universal feature of SDF, the microphysical process of the fog body enhancement, the causes of burst reinforcement and the characteristics of the boundary layer structure. There are also remarks about fog dissipations. The research results show that there are still many important scientific problems to be solved about dense fog. Future directions for understanding Dense Fog Burst Reinforcement including that: (1) How fog expands to the surrounding areas, and what factors influence the spread of fog? (2) The physical mechanism of dense fog burst reinforcement. (3) It needs to be further observed to study the role of low-level jets in the formation of dense fog. How the low-level jet stream forms? (4) impact of air pollution on the dense fog formation.