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General Features of MCSs with the Organization of Multiple Parallel Rainbands in China

Abstract

Multiple parallel rainbands (MPRBs) are a form of mesoscale convective systems (MCSs), typically consisting of 3 to 4 rainbands, which often result in high rainfall accumulation. MPRBs have two types: Initiation-type (where rainbands form individually) and Differentiation-type (where rainbands form through the splitting of large rainbands or merging of smaller cells). Based on statistics from 2016 to 2020 in China, the regions with higher occurrence frequencies of MPRBs include the Beibu Gulf, Guangdong, northern Jiangxi, and southern Shandong. In terms of temporal distribution, the occurrence frequency of MPRBs peaks in July, with the primary peak occurring at midnight and a secondary peak in the early morning.

Most MPRBs exhibit a training effect, with band training being the dominant mode. Due to the band training effect and the slower movement caused by band back-building, their speed is approximately 4 to 8 m/s. As a result, MPRBs are prone to causing intense rainfall. However, due to their generally short duration (78% lasting less than 2 hours), prolonged rainfall is uncommon. Nonetheless, from a disaster prevention perspective, they still warrant close attention.

Keyword

MCSs(Mesoscale Convective Systems)

Reference.

P. Wang, and Z. Meng, 2023 : General Features of MCSs with the Organization of Multiple Parallel Rainbands in China. *Monthly Weather Review*, **151**, 2485-2499, https://doi.org/10.1175/MWR-D-22-0304.1