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Abstract: **Freezing Precipitation and Freezing Events over Northern Eurasia and North America: Climatology and the Last Decade Changes**

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With global climate change in the extratropics, the 0°C isotherm will not disappear and associated precipitation events will continue to occur. The near-0°C temperatures should generally move poleward and arrive at many locations earlier in spring or later in autumn. This could potentially affect the seasonal cycle of near-0°C precipitation. The overall warming, together with a larger influx of the water vapor in the winter atmosphere from the oceans (including ice-free portions of the Arctic Ocean) can also affect the amount of near-0°C precipitation. The issue of near 0°C precipitation is linked with several hazardous phenomena including heavy snowfall/rainfall transition around °C; strong blizzards; rain-on-snow events causing floods; freezing rain and freezing drizzle; and ice load on infrastructure. In our presentation using more than 1,500 long-term time series of synoptic observations for the past four decades, we show climatology and the empirical evidence about changes in occurrence and intensity of freezing rains and freezing drizzles over most of Northern Eurasia and two countries of North America.
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Key words:
freezing rain; freezing drizzle; northern extratropics; climatology and changes