



## **Freezing Precipitation and Freezing Events over Northern Eurasia and North America**

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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 0°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 present climatology and the empirical evidence about changes in occurrence, timing, and intensity of freezing rains and freezing drizzles over several countries of Northern Eurasia and North America.

In the former Soviet Union, instrumental monitoring of ice load has been performed by ice accretion indicator that in addition to the type, intensity and duration of ice deposits reports also their weight and size. Estimates of climatology and changes in ice load based on this monitoring at 958 Russian stations will be also presented.

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