Differing Trends in United States and European Severe Thunderstorm Environments in a Warming Climate

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https://doi.org/10.1175/BAMS-D-20-0004.2
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This document is a supplement to https://doi.org/10.1175/BAMS-D-20-0004.1
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Fig. ES1. As in Fig. 1a, but for seasons.
Seasonal climatology and long-term trends of 500-700 hPa lapse rate [K km\(^{-1}\)]

| 95\(^{th}\) percentile | Trend (per decade)* | 95\(^{th}\) percentile | Trend (per decade)* |
|-------------------------|---------------------|-------------------------|---------------------|
| Spring (MAM)            |                     |                         |                     |
| Summer (JA)             |                     |                         |                     |
| Autumn (SON)            |                     |                         |                     |
| Winter (DJF)            |                     |                         |                     |

* - Trend computed with Sen's slope, x marks denote statistically significant trend (p-value < 0.05)

Fig. ES2. As in Fig. 1b, but for seasons.
Fig. ES3. As in Fig. 4a, but for seasons.
Fig. ES4. As in Fig. 4b, but for seasons.
Seasonal climatology and long-term trends of inhibiting environments***
(as a fraction of all CAPE > 150 J kg\(^{-1}\) situations)

Fig. E55. As in Fig. 5a, but for seasons.

* - Fraction is denoted by situations with inhibiting environments among cases when CAPE > 150 J kg\(^{-1}\)
** - Trend computed with Sen's slope, x marks denote statistically significant trend (p-value < 0.05)
*** - Inhibiting environment is considered when absolute CIN > 75 J kg\(^{-1}\)
Seasonal climatology and long-term trends of inhibiting environments for various CIN thresholds (as a fraction of all CAPE > 150 J kg\(^{-1}\) situations)

Fig. ES6. As in Fig. 5a, but with CIN thresholds of (a) 50, (b) 100, and (c) 150 J kg\(^{-1}\).

* - Fraction is denoted by situations with inhibiting environments among cases when CAPE > 150 J kg\(^{-1}\)

** - Trend computed with Sen's slope, x marks denote statistically significant trend (p-value < 0.05)

*** - Inhibiting environment is considered when absolute CIN is (a) > 50 J kg\(^{-1}\), (b) > 100 J kg\(^{-1}\), (c) > 150 J kg\(^{-1}\)
Fig. ES7. As in Fig. 5b, but for seasons.
Seasonal climatology and long-term trends of 0-4km relative humidity [%]

*50th percentile (only for CAPE > 150 J kg⁻¹)*
*Trend (per decade)*

**a** Spring (MAM)

**b** Summer (JA)

**c** Autumn (SON)

**d** Winter (DJF)

* - Trend computed with Sen's slope, x marks denote statistically significant trend (p-value < 0.05)

Fig. ES8. As in Fig. 5c, but for seasons.
Fig. ES9. As in Fig. 6, but without convective precipitation proxy.