



*Supplement of*

## **Brief communication: How extreme was the thunderstorm rain in Vienna on 17 August 2024? A temporal and spatial analysis**

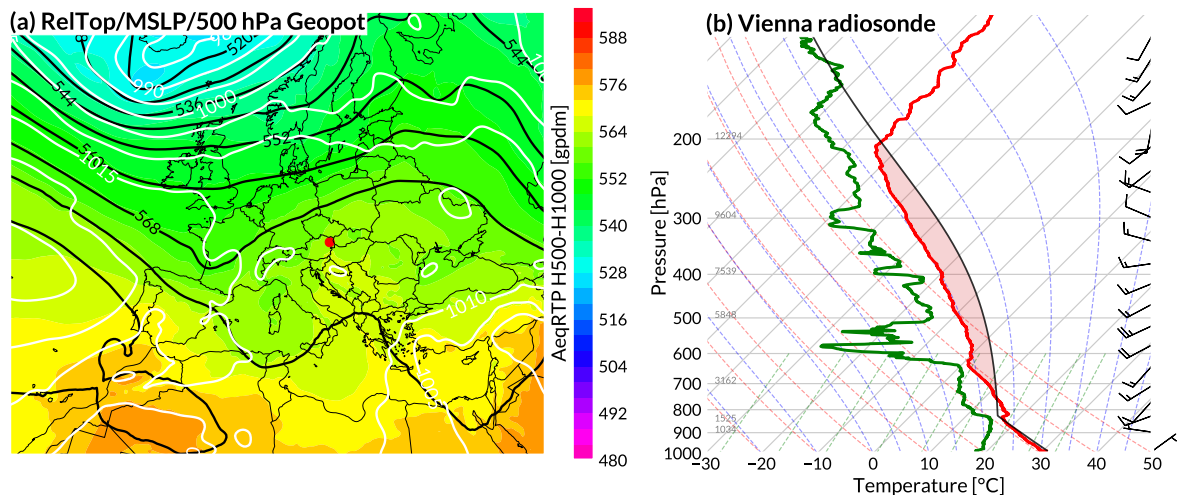
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| Synop | Name                | Longitude | Latitude  | Elevation (m) | Start year (1-hour resolution) |
|-------|---------------------|-----------|-----------|---------------|--------------------------------|
| 11077 | Brunn am Gebirge    | 16°16'12" | 48°6'25"  | 291           | 2008                           |
| 11066 | Langenlebarn        | 16°07'05" | 48°19'26" | 175           | 1992                           |
| 11037 | Gross-Enzersdorf    | 16°33'33" | 48°11'59" | 154           | 1994                           |
| 11036 | Schwechat           | 16°34'53" | 48°7'3"   | 183           | 2008                           |
| 11090 | Wien-Donaufeld      | 16°25'53" | 48°15'26" | 160           | 1996                           |
| 11035 | Wien-Hohe Warte     | 16°21'23" | 48°14'55" | 198           | 1941                           |
| 11034 | Wien-Innere Stadt   | 16°22'1"  | 48°11'54" | 177           | 1985                           |
| 11044 | Wien-Jubiläumswarte | 16°15'55" | 48°13'16" | 450           | 2009                           |
| 11080 | Wien-Mariabrunn     | 16°13'46" | 48°12'25" | 225           | 1997                           |
| 11042 | Wien-Stammersdorf   | 16°24'20" | 48°18'21" | 191           | 2008                           |
| 11040 | Wien-Unterlaa       | 16°25'10" | 48°7'30"  | 200           | 1996                           |

**Table S1.** List of the eleven weather stations operated by GeoSphere Austria in the Vienna metro area



**Figure S1.** Weather conditions at 1200 UTC 17 August 2024. (a) Synoptic overview including equivalent relative topography (500-1000 hPa) as background colors, 500 hPa geopotential as black contours and mean sea level pressure as white contours. The red circle indicates the location of Vienna. (b) Radiosonde profile (skewT-logp diagram) at Vienna Hohe Warte. Colored lines show ambient temperature (red) and dewpoint temperature (green). Red shading indicates CAPE. Wind barbs plotted with half and full barbs indicate 5 and 10 kt, respectively.