

Central Europe getting warmer

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Surface temperature analysis of Central Europe shows that temperatures there have risen three times faster than the Northern Hemisphere land average.

Rolf Philipona of Physikalisch-Meteorologisches Observatorium in Davos, Switzerland, says that while temperatures and humidity across Europe changed uniformly for individual months, both temperature and humidity strongly increased in value from west to east for all months.

Thermal long wave radiation from the atmosphere was strongly increasing under cloud-free skies and was highly correlated with increasing temperature. The authors show that 70 percent of the increase in the downward long wave radiation was due to increasing water vapor in the atmosphere, while 30 percent was due to increasing manmade greenhouse gases.

These observations combine to suggest that the region is experiencing "positive water vapor feedback," in which carbon dioxide emissions warm the planet, causing more surface water to evaporate. This water vapor, also a greenhouse gas, accumulates in the atmosphere and further increases surface temperatures.

The findings are published in the *Geophysical Research Letters*.

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