



Episode of unusual high solar ultraviolet radiation over central Europe due to a dynamical reduced low ozone event in May 2005

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In late May 2005 unusual high levels of solar ultraviolet radiation were observed over central Europe. In Northern Germany the measured irradiance of erythemally effective radiation exceeded the climatological mean by more than about 20%. An extreme low ozone event for the season coincided with high solar elevation angles and high pressure induced clear sky conditions leading to the highest value of erythemal UV-radiation ever observed over this location in May since 1994. This extremely low ozone event was caused by an elevation of tropopause height accompanied with a poleward advection of ozone-poor air from the tropics. Available satellite measurements of the ozone column are used to highlight the mechanism leading to this quite unusual late spring event.

Dynamically induced low ozone episodes that happen in late spring can considerably enhance the solar UV-radiation in mid latitudes and therefore contribute to the UV-burden of people living in these regions.