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## Long-term solar UV radiation reconstructed by ANN modelling with emphasis on spatial characteristics of input data

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**Abstract.** Artificial Neural Networks (ANN) are efficient tools to derive solar UV radiation from measured meteorological parameters such as global radiation, aerosol optical depths and atmospheric column ozone. The ANN model has been tested with different combinations of data from the two sites Potsdam and Lindenberg, and used to reconstruct solar UV radiation at eight European sites by more than 100 years into the past. Special emphasis will be given to the discussion of small-scale characteristics of input data to the ANN model.

Annual totals of UV radiation derived from reconstructed daily UV values reflect interannual variations and long-term patterns that are compatible with variabilities and changes of measured input data, in particular global dimming by about 1980/1990, subsequent global brightening, volcanic eruption effects such as that of Mt. Pinatubo, and the long-term ozone decline since the 1970s. Patterns of annual erythemal UV radiation are very similar at sites located at latitudes close to each other, but different patterns occur between UV radiation at sites in different latitude regions.

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