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Solar EUV and the terrestrial circulation

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Fluctuations in solar UV radiation, and especially the EUV fraction, influence the global circulation at timescales ranging from millennia to days. The process is illustrated by the character and timing of Holocene alluvial episodes in the lower middle latitudes of western Eurasia and southern North America, as they reflect the changing location of the polar jet streams, by evidence for shifts in the position of the intertropical front in recent centuries, and by instrumental measurements of EUV flux, river discharge and atmospheric pressure in the last few decades. The solar impact on climate, both short-term and secular, thus includes large scale effects which are initiated in the upper atmosphere and on which human activity appears to have little impact. Being quasi-periodic they raise the prospect of approximate but robust forecasting.