

SIGNATURE OF HALE AND GLEISSBERG SOLAR CYCLES IN THE HELIOSPHERE – MAGNETOSPHERE ENVIRONMENT

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Annual means of measured and reconstructed solar heliospheric and magnetospheric parameters are used to infer solar activity signatures at the Hale and Gleissberg cycles timescales. Available open and total solar flux, modulation strength, cosmic ray flux, total solar irradiance data, reconstructed back to 1700, solar wind parameters (speed and density) and the magnitude of the heliospheric magnetic field at 1 AU, reconstructed back to 1870, as well as the time series of geomagnetic activity indices (aa, IDV, IHV), going back to 1870, have been considered. Simple filtering procedures (successive 11-, 22-, and 88-year running averages and differences between them) and scaling by the standard deviation from the average value for the common interval covered by the data show that the Hale and Gleissberg signals are quite similar in all studied parameters, pointing to a common pacing source, the solar dynamo.

Hale and Gleissberg cycles, heliospheric/magnetospheric/solar wind parameters

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