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Long-term correlations in solar proxies and solar wind parameters

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An assessment of the long-term behaviour of the solar wind is of paramount importance to understand the nature of its relationship with solar activity cycles, but also to evaluate its long-lasting effects on Earth. Understanding the long-term solar wind properties also helps putting in a different perspective space weather events on shorter time scales and extreme events. In order to connect the solar activity variations to solar wind properties, we used Ca II K index and solar wind OMNI data in the time interval between 1965 and 2020, which almost entirely covers the last 5 solar cycles. A time lag in the correlation between the parameters is found, that seems to show a temporal evolution over the different solar cycles. The results from our analysis offer the possibility to deepen the understanding of the processes that link the global dynamo to solar variability and to the properties of the solar wind near the Earth.

Student poster?

Primary author: REDA, Raffaele (Istituto Nazionale di Astrofisica (INAF))

Co-authors: GIOVANNELLI, Luca (Istituto Nazionale di Astrofisica (INAF)); ALBERTI, Tommaso (Istituto Nazionale di Astrofisica (INAF)); BERRILLI, Francesco (Istituto Nazionale di Astrofisica (INAF)); BERTELLO, Luca; Dr DEL MORO, Dario; DI MAURO, Maria Giuseppina (Istituto Nazionale di Astrofisica (INAF)); GIOBBI, Piermarco; PENZA, Valentina (Università "Tor Vergata" - Roma)

Presenter: REDA, Raffaele (Istituto Nazionale di Astrofisica (INAF))

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