

Differences between solar cycle systems



Overview

These are 1) the large role of ephemeral active regions in the origin of solar cycles, 2) the depth of the origin of active regions and sunspots, 3) the mechanisms of how areas of unipolar magnetic network migrate to the solar poles every 11 years, and 4) the nature of the polarity reversal in alternate 22-year cycles rather than 11-year cycles. How long does solar-cycle forcing last?

Two large volcanic eruptions, El Chichón in March 1982 and Pinatubo in June 1991, coincidentally erupted during solar max. So the response to the solar-cycle forcing could possibly be underestimated. However, the effect should be temporary and lasted two to three years.

How many models have solar-cycle forcing?

Shown is the average of 51 models with solar-cycle forcing. The LDA-projected times series $\langle T_{\text{SOLAR}}(t) \rangle$ of each model is normalized to the unity regression coefficient $\langle T_{\text{SOLAR}}(t) | TSI(t) \rangle = 1$ so that the LDA spatial pattern carries the unit of temperature.

What data do we use for the solar cycle?

For the solar cycle, we use only the modern record since 1950, aided also by the recent availability of a geographically complete dataset, GISTEMP Version 4, based on NOAA Global Historical Climatology Network (GHCN) Version 4 (meteorological stations) and ERSSTv5 (ocean) 44.

How are solar-cycle responses extracted from climate models?

Solar-cycle responses from the climate models are extracted from each model's surface temperature using the method of LDA 61, 63, which utilizes the spatial-temporal information of the phenomenon.

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Understanding Solar Cycles: Patterns and Predictions

Title: A 22-Year Cycle of the Network Topology for Solar Active Regions
Abstract: In this paper, solar cycles 21 to 24 were compared using complex network analysis. A network ...

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Explaining why all solar cycles rise differently but decay in ...

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A comparative study between two



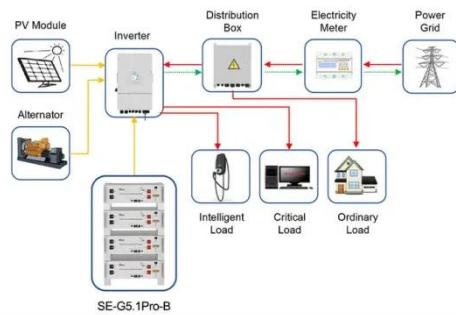
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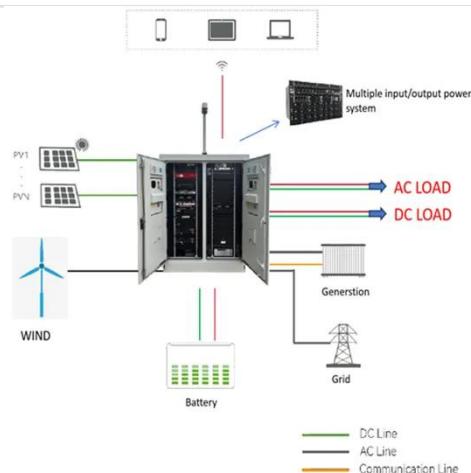
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How to distinguish the cycle in and cycle out of solar panels

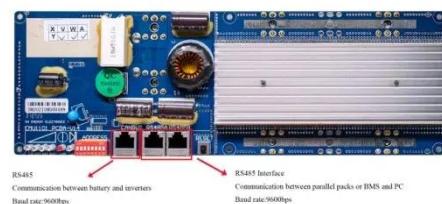
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Observations key to understanding solar cycles: a review

The combination of the two 22-year solar cycles, with their large numbers of short-lived active regions and ephemeral active regions are now understood to be the fundamental ...

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Ultimately, when considering the differences among solar glass tubes, it becomes evident that various factors significantly influence ...

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The Solar Clock

When the solar cycle is very active, our space-based systems, including advanced communication satellites and navigation networks, are increasingly affected. Thus, it is ...

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Observation-Based Iterative Map for Solar Cycles. I. Nature of Solar

Distinguishing between the two mechanisms is crucial for predicting



solar cycles. Here we reduce the solar dynamo process responsible for the solar cycle to a one-dimensional ...

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Ocean Thermal Energy Technology Brief

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The global signal of the 11-year solar cycle in the stratosphere

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Two Solar Cycles, One Sun: The Overlap of Cycle 25 and the ...

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A Comprehensive Study of Solar Cycles 23 Vs. 24 And ...

Introduction- Solar activity,



characterized by the 11-year solar cycle, plays a significant role in influencing Earth's climate. The Sun's variability, manifested through ...

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