



Contribution ID: 154

Type: Poster

Spotless days and geomagnetic index as the predictors of solar cycle 25

Monday, 6 September 2021 15:43 (13 minutes)

We study the sunspot activity in relation to spotless days (SLDs) during the descending phase of solar cycle 11–24 to predict the amplitude of sunspot cycle 25. For this purpose, in addition to SLD, we also use the geomagnetic activity (aa index) during the descending phase of a given cycle. A very strong correlation of the SLD ($R=0.68$) and aa index ($R=0.86$) during the descending phase of a given cycle with the maximum amplitude of next solar cycle has been estimated. The empirical relationship led us to deduce the amplitude of cycle 25 to be 99.13 ± 14.97 and 104.23 ± 17.35 using SLD and aa index, respectively as predictors. Both the predictors provide comparable amplitude for solar cycle 25 and reveal that the solar cycle 25 will be weaker than cycle 24. Further we derive that the maximum of cycle 25 is likely to occur between February and March 2024. While the aa index has been used extensively in the past, this work establishes SLDs as another potential candidate for predicting the characteristics of the next cycle.

Student poster?

Primary authors: BURUD, Dipali (Ksv, gandhinagar india); Dr JAIN, rajmal (Physical Research Laboratory, Navrangpura, 380009 Ahmedabad); Dr AWASTHI, Arun (CAS Key Laboratory of Solar Activity, National Astronomical Observatories, Beijing 100101, China)

Presenter: BURUD, Dipali (Ksv, gandhinagar india)

Session Classification: Poster Session 2.1

Track Classification: Session 1 - Solar Interior, Dynamo, Large-Scale Flows and the Solar Cycle