



The physics of the Sun

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Abstract

The sunspot number series is one of the longest and most detailed available series in astrophysics. The series was first constructed in 1849 by Prof. Rudolf Wolf and a time series is built in real time since then, involving a lot of observers who differ from each other in terms of their way of counting sunspots, different telescopes and eyesights. Hence, developing a robust statistically stable method to stitch them together is necessary.

This talk will focus on the basics of solar physics and some statistical methods we explored to stitch it. It will help the audiences to understand the basic processes going on underneath the photosphere and why predicting them is important. It will also focus on the uses of maintaining the above series from dynamo as well as space weather prediction perspectives, with a sneak peak into the operation of the USET (Uccle Solar Equatorial Table) situated in Royal Observatory of Belgium.