

## Solar cycle phase and occurrence of intense space weather events

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Length and shape of solar cycle expressed by sunspot number change cycle to cycle. We need to normalize this to discuss on dependence of solar cycle phase of intense space weather events. For example, it is important to study whether intense space weather events occur uniformly in a solar cycle or not. We normalize shape of cycles using length, rise time, and fall time of cycles. In our presentation, we will report our result of analysis on large flares, intense geomagnetic storms, and so on.

Keywords: solar cycle, space weather, extreme event