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## Extreme event theory applied to the solar wind

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Society's dependence on technology has increased during the past years. Therefore, understanding the hazardous events including space weather events that lead to technological problems is now critical. As solar wind is the driver of space weather, identifying extreme solar wind is important. In this work extreme value theory is used to characterize the solar wind parameters most relevant to space weather: interplanetary magnetic field strength and proton speed. This is done using an extreme value distribution for all data above a certain threshold for each parameter. Analysis demonstrates that these thresholds are around 900 km/s for the proton speed and around 95 nT for the interplanetary magnetic field. Based on 20 years of solar wind data, we made an estimation for the interplanetary magnetic field and solar wind proton speed with return periods corresponding to 4 and 6 solar cycles with a 99% confidence interval.