

## Sun, Space Weather, and Solar-Stellar Connection



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### **an effective approach for identifying magnetic field switchbacks in the solar wind**

Magnetic field switchbacks, crucial for understanding solar wind dynamics, are typically identified through magnetic field reversals (Dudok de Wit et al., 2020). This methodology is susceptible to mistakes stemming from data contamination caused by phenomena such as coronal mass ejections (CMEs), flux ropes, magnetic clouds (MICCS), heliospheric current sheets (HCS), partial heliospheric plasma sheets, and strahl dropout. To improve identification accuracy, we provide an advanced method that employs stringent criteria by utilizing several solar wind parameters, including density, temperature, plasma beta, deflection angle, and solar wind velocity. This multi-parameter approach significantly enhances the accuracy of switchback identification by removing data contamination and reducing false positives. Our methodology provides a more reliable analysis of magnetic field Switchbacks in the solar wind.

#### **Contribution Type**

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#### **Theme**

Connecting Solar Corona to Heliosphere

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