

Do substorms need a solar wind trigger?

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Evidence is present in the literature for both triggered and untriggered substorms. Previous attempts to evaluate the likelihood of solar wind triggers being associated with substorm onsets by chance have presented compelling evidence for the external triggering of substorms. However, these studies have used a null hypothesis that substorms are unrelated to a signature which comprises both a trigger and a growth phase requirement. We test the association between substorm onsets and substorm triggers, with and without growth phase requirements, to determine whether substorms and solar wind trigger signatures are related.