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Alfvénic intervals in the solar wind at 1 AU 1995-2011

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We have done a statistical study of alfvénic intervals in the solar wind based on ACE and Wind measurements. During alfvénic intervals, the magnetic field exhibits alfvénic fluctuations with periods around 1 hour. The magnetic fluctuations are typically 2-4 nT, and the solar wind speed is mostly above 400 km/s. The effect is moderate and regular energy transfer from the solar wind to the magnetosphere in periods up to 8 days, but 1-3 days is most common. Our statistics show that alvénic fluctuations are the most important drivers of geomagnetic activity in the trailing parts of high-speed streams, while non-alfvenic fluctuations are more important when the solar wind speed is increasing, which typically correspond to the stream interaction region. From 1995 to 2011 there were 738 alfvénic intervals, each lasting more than 12 hours. The occurrence rate of such intervals has a strong solar cycle dependence, with a peak in the early declining phase of the sunspot cycle. In the year of maximum occurrence (2003), the total duration of alfvénic intervals was more than 180 days, while on average the total duration is 73 days per year. The list of alfvenic intervals will be provided for the community in a paper under preparation.