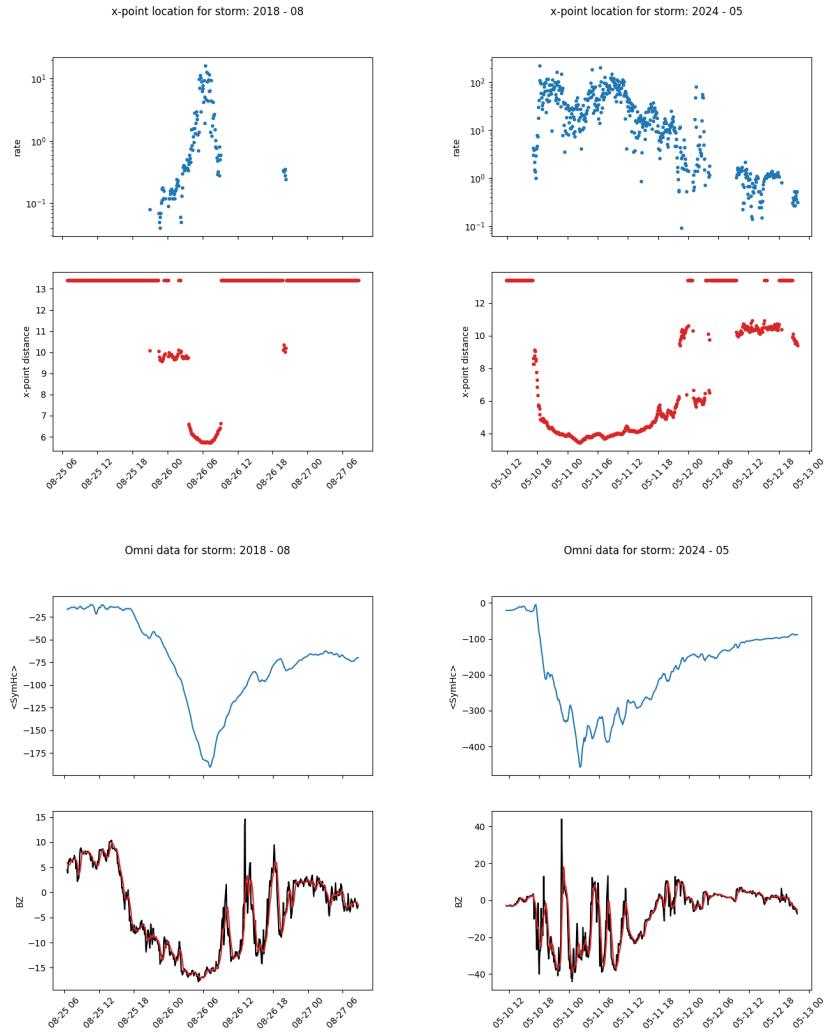


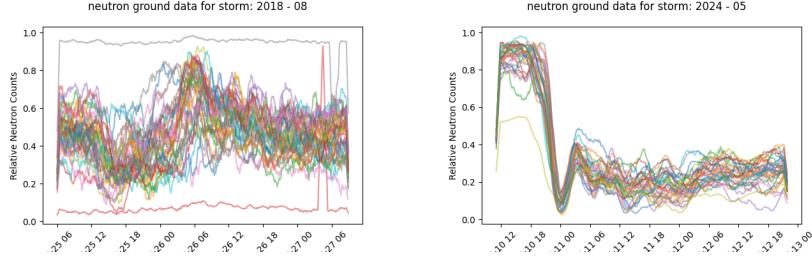
1 Good Cases

1.1 The SymH metric is a good predictor of near-earth x-points

We have used empirical models to approximate the magneto-tail's near earth field during strong disturbances. During these strong storms, these models show a strong magnetic flux rope forms between the magneto-tail current sheet and the near-earth dipolar field. The presence of this flux rope near earth, causes a magnetic configuration that is consistent with traditional x-point reconnection. We find that the nearest reconnection to the earth's surface occurs at the minima of the SymH index.

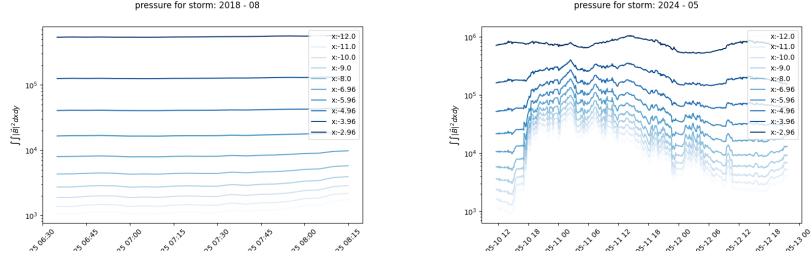


- 1.2 An indicator of this near-earth reconnection is the enhancement in ground showers seen in neutron monitor data.



- 1.3 Strong reconnection in the tail can cause the ejection of plasmoids that results in near earth reconnection.

- 1.3.1 The position of this reconnection is determined by a matching of the tail pressure with the ambient pressure of the earth's magnetosphere.



2 Uncertain cases

2.1 March 2022

