

# Weak kinetic Alfvén waves turbulence during the 14 November 2012 geomagnetic storm: Van Allen Probes observations

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© 2015. American Geophysical Union. All Rights Reserved. In the dawn sector,  $L \approx 5.5$  and  $MLT \approx 4-7$ , from 01:30 to 06:00 UT during the 14 November 2012 geomagnetic storm, both Van Allen Probes observed an alternating sequence of locally quiet and disturbed intervals with two strikingly different power fluctuation levels and magnetic field orientations: either small ( $\sim 10^{-2}$  nT<sup>2</sup>) total power with strong GSM  $B_x$  and weak  $B_y$  or large ( $\sim 10$  nT<sup>2</sup>) total power with weak  $B_x$  and strong  $B_y$  and  $B_z$  components. During both kinds of intervals the fluctuations occur in the vicinity of the local ion gyrofrequencies (0.01-10 Hz) in the spacecraft frame, propagate oblique to the magnetic field, ( $\approx 60^\circ$ ), and have magnetic compressibility  $C = |B_{\parallel}|/|B_{\perp}| \ll 1$ , where  $B_{\parallel}$  ( $B_{\perp}$ ) are the average amplitudes of the fluctuations parallel (perpendicular) to the mean field. Electric