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Statistics of broadband low-frequency waves at the magnetopause

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Broadband waves near and below the lower-hybrid frequency have been observed at the magnetopause for a long time. In recent years NASA's multi-spacecraft mission *Magnetospheric Multiscale* (MMS) has enabled the waves to be analysed in much greater detail.

Previous case studies have shown that these waves can cause plasma diffusion across the magnetopause, leading to the broadening of current layers. It has also been argued that the waves might contribute to parallel electron heating and anomalous resistivity.

In this study we analyze the aforementioned waves at the magnetopause using multi-spacecraft analysis methods and data from the MMS mission. We investigate the properties of these waves on a statistical level, using several months of data. In particular, we present the relation between the waves and ambient plasma properties such as density gradients and the corresponding gradient length-scale, and to magnetic reconnection.