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Electromagnetic wave activity detected by MMS at the vicinity of the magnetopause and its relation to heating and acceleration of particles

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In the present study, we analyze different dayside magnetopause crossings detected by the MMS mission in order to investigate the relation between the electromagnetic wave activity and particle heating/acceleration. In particular, our study is focused on two different frequency ranges: (1) 1-10 Hz range which corresponds to the frequency domain of kinetic Alfvén and lower-hybrid waves, (2) 10 Hz-1kHz which corresponds mainly to the whistler mode wave frequency domain. After characterizing the different types of waves, we estimate their respective energy content as well as their possible role for heating and accelerating the plasma.