**Probing planetary magnetosphere/ionosphere with radio and plasma wave instruments**

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Radio emissions and plasma waves emitted by space plasma provide valuable information about the source region, for example plasma density and temperature. Nearly all the scientific spacecraft since Explorer 1 are equipped with radio and plasma wave instruments, which have been used to monitor the planetary auroral activities, lightning storms on gas giants, and carry out in-situ measurements of solar wind, planetary magnetosphere/ionosphere plasma. Electric field antennas of wave instruments can also be used as a detector for dust impact. In this presentation, I will show some science highlights from the Cassini and Juno mission and discuss some of my research works based on radio and plasma wave instrument observations.