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PREDICTING THE SOLAR FLARE CHARACTERISTICS AND ITS IMPACT ON THE NEAR  
EARTH PHENOMENA USING RADIO OCCULTATION TECHNIQUE.

**Abstract**

The Solar Flares impact the magnetosphere of earth and alter the Magnetic properties around it. These Flares essentially consists of variables present in space like Electrons, Protons, gamma rays, X-rays and other electromagnetic radiations in the Electromagnetic Spectrum which also affect the Radio Signals. The Radio Occultation Technique relies on the change in the Signal property as it passes through the various parameters. This technique can be used to analyze the fluctuations caused due to the Solar Flares as they pass through the Earth's magnetosphere and can be used to plot the variations of the electron count in the ionosphere, Magnetic Fluctuations and also to monitor the Auroral Substorms. A satellite equipped with a proper radio transmitter can be used to pass these signals at suitable frequencies through these regions. Another satellite located at a favorable position can receive it after the signal has travelled through the region of impact. This data which will essentially consist of the phase delays in the signal can be downlinked to ground stations to generate the plots and models of the regions and how they are affected after the Solar Flare event. This will help us in understanding the fluctuations of these parameters due to the abrupt Flares and how to avoid the damage caused due to these phenomena on the spacecraft's orbiting around the earth which are adversely affected by it. It will also help us to understand the nature of the Solar Flares in terms of accuracy.