METHODS FOR DETERMINING THE FREQUENCY DRIFT RATE OF SOLAR RADIO BURSTS

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In this report we consider solar radio bursts as a probe signal for monitoring physical properties of the solar corona. One of the most important characteristics of solar bursts of different types is their frequency drift rate. It indicates that fast electrons ejected from the solar active regions and moving through the corona generate such bursts from plasma waves near the local electron plasma frequency and/or near its harmonic. As a result, solar bursts drift on dynamic spectra with frequency. Often the evolution of intensity humps of solar bursts in frequency and in time can be fitted to a power-law model. This provides strong evidence that the electron density in solar corona decreases as a power function of the radial distance above the solar photosphere. To interpret properly the observed rate of frequency drift for solar bursts, we discuss advantages and disadvantages of several methods helpful for conducting the study. Our results allow us to obtain the efficiency estimation for determining the frequency drift of solar bursts by different approaches.