



Faint drifting decameter radio bursts of the solar corona : a statistical study

C. Briand (1), A. Lecacheux(1), P. Zarka(1), M. Maksimovic (1)

Observatoire de Paris, LESIA

Decameter radio observations of the solar corona reveal the presence of numerous, faint frequency drifting structures. We analyse observations performed between 1998 and 2002 with digital receivers at the Kharkov UTR-2 and Nançay radiotelescopes. More than 1600 structures have been identified. From their statistical analysis, we derive their main characteristics: frequency drift, lifetime, occurrence with the solar cycle and solar activity ...). We also give some clues on how to optimize the future observations of such structures. Assuming that these emissions are the signature of electron clouds propagating through the solar corona, we deduce that these clouds must have a speed of about 3-5 electron thermal velocity. We show that a spatially-localized, time modulation of the electron distribution function can easily lead to the formation of electron clouds of such low velocity.