

Quasi-periodic fast propagating wave trains as a seismological tool for plasma structures in the solar corona

Elena G. Kupriyanova^{1,2} , Agneshka V. Mikhalechuk²

¹ Main (Pulkovo) Astronomical Observatory of the Russian Academy of Sciences

² St Petersburg University

elenku@bk.ru

The quasi-periodic fast propagating wave trains (QFP) – the recently discovered phenomenon of the solar coronal seismology – were first formalized as the fast magnetohydrodynamic waves propagating along magnetic waveguides forming the solar corona. Such waves modulate plasma parameters in the waveguide, and the time evolution of the modulation is characterized with a specific (“tadpole”) form of the wavelet spectrum [1]. Modulation of both plasma density and magnetic field leads to modulation of the emission from the waveguide in different bands of the electromagnetic spectrum. In the talk, the QFP are discussed as a seismological tool for diagnostics of the coronal waveguides, including those open into the interplanetary space, based on the data in extreme ultraviolet and radio bands.

[1] V. M. Nakariakov, T. D. Arber, C. E. Ault et al., Mon. Not. R. Astron. Soc. 349 (2004) 705.