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Microwave observations of coronal jets

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We discuss the diagnostics of plasma jets in the solar corona from multiwavelength imaging observations in the microwave band. We present several events observed with RATAN-600, Siberian Radioheliograph, and Nobeyama Radioheliograph. Obtained data provide us with spatially resolved imaging information alongside microwave flux observations at several frequencies. To analyze the context information on the three-dimensional structure of the coronal magnetic field, we reconstruct the magnetic field in the lower corona from the SDO/HMI magnetograms and compare it with the magnetic field at the base of the corona derived from the RATAN-600 data. In this work we demonstrate that microwave observations of the events associated with coronal jets can (1) give insights into jet dynamics and excitation mechanisms and (2) provide important information on physical conditions in the corona of an active region where a jet is initiated and developed. This work is supported by the Russian Foundation of Basic Research grant 18-29-21016.

Student poster?

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