Long Duration Events Observed with the Nobeyama Radioheliograph

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The long duration events are extensively observed with the Nobeyama Radioheliograph. Except the initial phase, the 17GHz emission from LDE flares is originated in thermal plasma. In the case that a sunspot (B>1500 G) is located at the footpoint of an LDE loop, a strongly polarized microwave source is observed. This is due to gyroresonance emission from hot plasma, and this fact means the lack of high-energy electrons. The LDE loops themselves can be observed at 17 GHz due to thermal f-f emission. Since the temperature sensitivity of the f-f emission is different from that of the SXT, the temperature diagnostics is possible based on the comparison between the soft X-ray images taken with the SXT and the microwave images.