

Observations of decametric Solar radio burst by an interferometric polarimeter

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The sun radiates burst-like radio waves at a decametric wave length. To investigate detailed characteristics of these emissions, it is necessary to measure polarization status at a wide frequency band. Recently, in accordance with a progress of human activities, condition of natural radio wave measurements becomes worse year by year due to the increase of artificial noises at lower frequency. Thus, it is difficult to observe the polarization parameters precisely, in particular, in the daytime. To overcome these difficulties we started the development of an interferometric polarimeter that is a kind of interferometer consisting of spaced antennas. After the development of the system, we have observed Jupiter around mid night to evaluate the system. Because artificial interferences are usually less during mid-night to early morning than day time, we can evaluate the system without interferences. The observation result showed a good system performance. Next, we observed a solar decametric wave radiation in the daytime when interferences are much stronger than the night time. Under this worse condition for a polarimetric observation, we could remove the interferences and have successfully got polarization status even for weak emissions. The system and experimental results will be reported in detail.