

Detection of the weak components of Jovian decametric radiation by applying the fringe correlation method.

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Jovian decametric radiation(DAM) is one of the most intense planetary radio emissions generated in the Jovian polar ionosphere reflecting various kinds of activities in the Jovian magnetosphere. In such DAM events, non-Io DAM events are generally weak; and especially for the case of non-Io-B, the detailed characteristics of the bursts have not been well understood. In the present study, fringe correlation method, which was originally proposed by Oya et al.(2003), is applied to the short baseline array interferometer of Iitate observatory of Tohoku University to detect such weak components of DAM. The feasibility of the application of fringe correlation method to detect weak radio signals has been verified by the observations of the cosmical radio sources, Cas A and Cyg A as objectives. In the initial observation carried out from Nov. 14 to Jan. 10, eleven DAM events have been successfully detected including 4 non- Io-B events. It has been suggested that fringe correlation method is one of the important techniques to clarify the unknown behavior of the weak DAM components.