ROBUST MEAN ESTIMATION FOR REAL−TIME BLANKING IN RADIOASTRONOMY (ThuPmOR10)

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Abstract :

Radio astronomy observations suffer from strong interferences that need to be blanked both in the time and frequency domains. In order to achieve real−time computations, interference detection is made by simple thresholding. The threshold value is linked to the mean estimation of the power of clean observed data that follows a chi2 distribution. Spurious values insensitivity is obtained by replacing mean by robust mean. A theoretical study of the variance of three estimators of the mean is presented. The study leads to a practical trimmed percentage that is chosen for the robust mean.

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