

On-board signal analysis in the STAFF instrument aboard Cluster II

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We describe the on-board signal processing used in the STAFF/SA spectrum analyser on Cluster II. The analyser treats signals from a five antenna system (two electric and three magnetic axes) over a frequency range of 8-4096 Hz, divided into three bands of three octaves each. The complete correlation matrix is calculated at 27 logarithmically spaced frequencies. The algorithms employed were developed at the Paris -Meudon Observatory and have been used on three other space missions, TSS-2, Wind, and Cassini. The analysis is similar to that of the wavelet transform.