

THE ELECTRIC FIELD AND WAVE EXPERIMENT FOR CLUSTER

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Probes of a unique probe-preamplifier design provide measurements of electric fields and waves from DC to 600 kHz with high accuracy and low noise levels on Cluster. Each of the four Cluster spacecraft carry two orthogonal pairs of probes in the spin plane of the spacecraft separated by 88 m. Signals from the probes of the Electric Field and Wave instrument, called EFW, are distributed to three other wave experiments on board. Waveform data of the potential between each pair of probes and the potential between probe and spacecraft, or the current to individual probes, or a combination of potential and current signals are recorded on EFW up to 31kHz in some modes. The performance of the new probes and the overall instrument capability will be demonstrated in the presentation.