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Langmuir and electrostatic waveforms in the solar wind and shocks: First results from the S/WAVES experiment on STEREO

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The S/WAVES experiments on the NASA STEREO spacecraft measure electric waveforms on 3 orthogonal monopoles at speeds up to 250k samples/sec using the Time Domain Sampler (TDS) and Low Rate Science (LRS) instruments. The TDS measures intense Langmuir waves in the electron foreshock and source regions of IP radio bursts, as well as electrostatic activity in shocks and current sheets. Here we present results from the early mission phase, which includes several crossings of the Earth's bow shock and electron foreshock edge.