

Abstract Submitted  
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**Measurement of the perturbed distributions of electrons and ions**<sup>1</sup> FRED SKIFF, University of Iowa — From the point of view of dynamics, plasmas are complex electromechanical systems with many degrees of freedom. These degrees of freedom are usually represented by the various forms of wave which can propagate in the plasma. Often the best way to sort out the plasma degrees of freedom is by observing the effects of waves on particle distribution functions. We will look at two recent examples. The first is the example of observing Alfvén waves through their effects on the electron distribution function. The perturbation on the electrons is observed by looking at the effect of an Alfvén wave on the propagation and damping of whistler mode waves (in the BAPSF at UCLA). A second example is the perturbation of the ion distribution function by kinetic waves in the drift-wave frequency range. These modes may appear to be part of the drift-wave spectrum, but are very different and can be distinguished by the perturbation they produce on the ion velocity distribution measured using laser-induced fluorescence (on a linear magnetized plasma column).

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