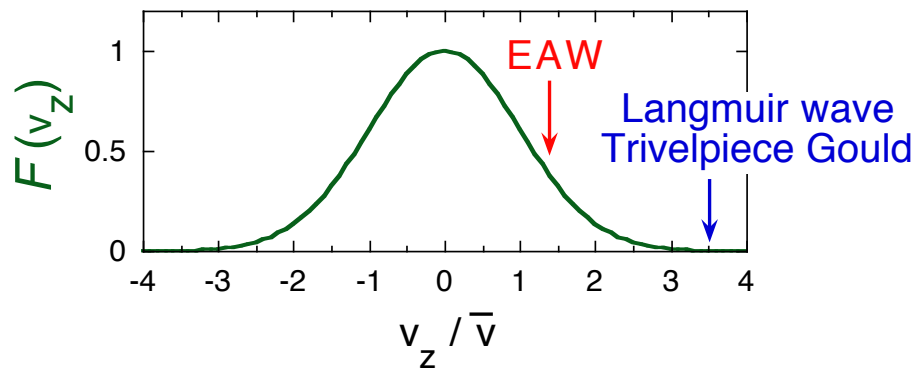


Electron Acoustic Waves (EAWs)

EAWs are novel kinetic waves that exist only because nonlinear trapping turns off Landau damping. We recently provided the first experimental characterization of EAWs, showing that they are easily excited by a low amplitude drive (red dots) applied at the theoretically predicted frequency (dashed). The driver automatically creates the required trapped particle distribution.

Surprisingly, a strong drive will excite EAW modes *off resonance* over a broad range of frequencies (bars). The driver modifies the particle distribution until the kinetic wave can exist at the driver frequency.

Wave-coherent LIF diagnostics of particle velocities show both the sinusoidal "fluid flow" variations ($2\delta v_0$), and the kinetic trapping regions (width $2\Delta v_T$).



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