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Session CP1 - Poster Session.

*POSTER session, Monday afternoon, November 15
Grand III, The Westin Seattle*

[CP1.36] Kinetic Eigenmodes and Discrete Spectrum of Langmuir Oscillations in a Weakly Collisional Plasma

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The damping of plasma oscillations in a weakly collisional plasma is revisited using a Fokker-Planck collision operator. Eigenfrequencies and eigenmodes are calculated numerically for a very small value of the collision frequency. It is shown that the Case-Van Kampen continuous spectrum is eliminated in the limit of zero collision frequency and replaced by a discrete spectrum. The Landau-damped solutions are recovered in this limit, but as true eigenmodes of the weakly collisional system. For small but non-zero collision frequency, the spectra and eigenmodes are qualitatively different from their counterparts in the collisionless theory. These results are consistent with recent experimental findings.

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