

Physics 239D: Nonlinear Plasma Physics

Spring 2015

Time and place: TTh9:30-10:50, FRH2111

Instructor: Toshiaki Tajima

References: R. Sagdeev and A. Galeev, "Nonlinear Plasma Theory" (1969)

R. Davidson, "Methods in Nonlinear Plasma Theory" (1972)

Y. Ichikawa and T. Tajima, "Nonlinear Dynamics and Particle Acceleration" (1991)

T. Tajima and S. Shibata, "Plasma Astrophysics" (1997)

I. Wave-Particle Interaction and Quasilinear Theory

II. Turbulence vs Coherence

III. Relativistic Coherence and Wakefield Acceleration

IV. Nonlinear Coherent Astrophysical Phenomena