Seminar

Institute for Plasma Research

Title : Transitions among different kinds of nonlinear oscillations in glow discharge plasma

Speaker: Dr. Sabuj Gosh
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Date : 13th November 2020 (Friday)

Time : 3.30 PM

Venue : Online - Join the talk: https://meet.ipr.res.in/Dr.SabujGosh_PDFtalk

Abstract :

Nonlinear oscillations present in glow discharge plasma as floating potential fluctuations are fascinating by nature. These oscillations present in the FPFs are observed to change their types as well as their nonlinear properties when their parametric conditions were changed. These oscillations are of various nature: chaotic oscillation, relaxation oscillation, mixed mode oscillations etc. In the path of transition the nonlinear properties, frequency components, various statistical measures vary significantly. Said observed paths include intermittent chaos, homoclinic bifurcations, mixed mode oscillations etc. As high frame per second visual diagnostic was developed and deployed in SINP tokamak vessel, a certain degree of one to one mapping emerged between the state of plasma glow and the nonlinearity of the floating potential oscillation. This relations can further be exploited to establish non-invasive diagnostics.