Summary of Non-LAPD Biasing Experiments

CCT

1989, Taylor, PRL—First biasing experiment using electrode; observation of H-mode behavior

TEXT

1987, Phillips, J. Nucl. Mat.—Limiter biasing, positive and negative voltages, decrease in particle flux observed with biasing

DIII-D

1990, Shimada, J. Nucl. Mat—Negative biasing of 300V with limiter; H-alpha emission reduced by 2-3

TEXTOR

1992, Weynants, Nucl. Fus.—Limiter biasing in increments of -600,-300,-100,no bias,100,300,500,750V; shows floating potential to have varying levels of shear at these biases; does not achieve a no-flow state; density changes observed but only after reaching a threshold bias.

1997, Jachmich, PPCF—Ramping of limiter biasing in time during discharge; shows variation of radial E-field with biasing

1998, Weynants, PPCF—Ramping of limiter biases in time 0-600V, shows scaling of diffusivity with shearing; asserts evidence of ExB flow as cause for particle confinement; significant changes occur at shearing rates ~10x decorrelation rate (shear = 50V/cm^2 = 5MHz, decorrelation = 500kHz)

2000, Boedo, Nucl. Fus.—Biasing shows decrease in particle and heat flux due to changes in cross-phase between density and E-field.

T-10

TJ-II

ISSTOK

1992, Cabral etal, PPCF—Positive and Negative Limiter Biasing; observed particle confinement during biases; biased +/0 200,250, and 300V

2004, Silva et al, PPCF—Limiter and Electrode biasing compared

Helimak