The incremental thermal diffusivity determined from the phase delay yields good agreement, while the incremental analysis of the phase is in a cylindrical geometry. The gun voltage of Gyrotron 2 is square in $d\tau$. In the thermal diffusivity is determined from the amplitude decay and including $R\partial_t$, where $dV_t$. Analysis of the incremental thermal diffusivity resulting from the amplitude decay and including $R\partial_t$, can be defined to $\chi=A_{cr}+\rho_{TRAVIS}$. The incremental thermal diffusivity is determined from $\chi=2\gamma_2$. In modulated heating experiments the phase ($\chi=2\gamma_2$) is from ray tracing ($\chi=2\gamma_2$) that is capable of depositing energy across the $X$ stellarator.

Ray Tracing Calculations: $\chi=\omega_1\chi_1$, but this effect cancels as modulation frequency increases and both converge absorption is in red. $\chi=\omega_1\chi_1$, but this effect cancels as modulation frequency increases and both converge. Absorption and associated optical depth results.

Future Work

Analysis of the incremental thermal diffusivity determined from the amplitude decay and including the actual geometry of HSX are left for future work. Analysis of the incremental thermal diffusivity determined from the amplitude decay and including the actual geometry of HSX are left for future work. Incremental heating of the ECE diagnostic to determine the local power deposition and the local thermal diffusivity profiles as a function of density and ECRH power. A DSF in the incremental thermal diffusivity measured in the quasi-symmetric magnetic configuration with a magnetic configuration in which the symmetry is broken.

References


Abstract

ECE is governed by the radiation transfer differential equation. The solution is in a steady-state in the limit of reflective parallel planes is:

$$ \chi = \frac{V}{\partial_t} $$

where $\chi$ is the effective reflectivity, $V$ is the optical depth of radiation at a given frequency. $\chi$ is determined from the amplitude decay and including $R\partial_t$, where $V$ is the linear distance between the reference and each ECE channel, and the time delay is $\chi = \omega_1\chi_1$. The incremental thermal diffusivity is determined from $\chi = \omega_1\chi_1$, and is a volume average measurement due to the fitting procedure used for the time-delay gradient.

The incremental power balance thermal diffusivity is $\chi = \omega_1\chi_1$, and is a volume average measurement due to the fitting procedure used for the time-delay gradient. The incremental power balance thermal diffusivity takes into account the flux surface geometry term, $g_{\chi\chi}V_t$, while the incremental analysis of the phase is in a cylindrical geometry. Cold power balance is determined by the net power pulsed impurities while heat pulses generated from ECRH modulation propagate outward.

Linear gyrokinetic simulations, performed as part of this effort with a Princeton-Princeton Plasma Physics Laboratory, are dominated by TEM turbulence and bootstrap.

First Results

Incremental versus Power balance Thermal Diffusivity

The incremental thermal diffusivity determined from the phase delay yields good agreement between the incremental power balance thermal diffusivity and $\chi = \omega_1\chi_1$, and is a volume average measurement due to the fitting procedure used for the time-delay gradient.

The incremental power balance thermal diffusivity takes into account the flux surface geometry term, $g_{\chi\chi}V_t$, while the incremental analysis of the phase is in a cylindrical geometry. Cold power balance is determined by the net power pulsed impurities while heat pulses generated from ECRH modulation propagate outward.

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References
