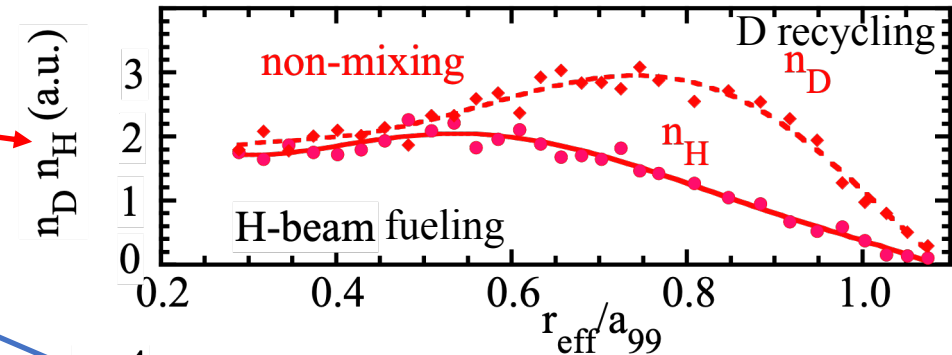
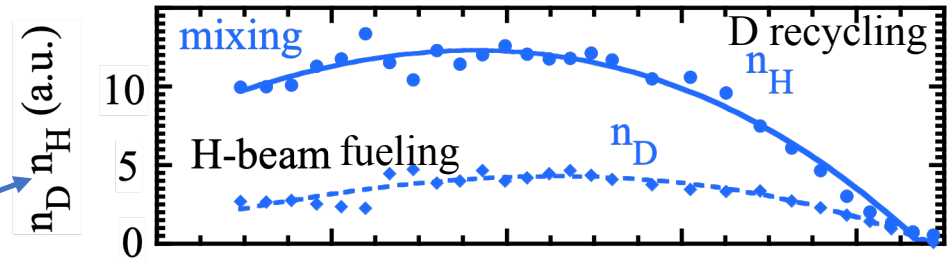


Isotope-mixing and non-mixing states in LHD (EX-6-2:K.Ida)

Parameter regime and characteristics of density fluctuation for isotope non-mixing and mixing are investigated in Large Helical Device (LHD)

Parameters	Non-mixing state	Mixing state
Isotope density ratio	Non-uniform	Uniform
Electron density	$< 2-3 \times 10^{19} \text{ m}^{-3}$	$> 2-3 \times 10^{19} \text{ m}^{-3}$
Density gradient	$dn_e/dr \leq 0$	$dn_e/dr > 0$
T_e/T_i ratio	Large ($>1-2$)	Small ($<1-2$)
Peak frequency	60–90 kHz	20–40 kHz
Intrinsic toroidal flow	Co-direction	Counter-direction



Gyrokinetic simulation (GKV) suggests a strong correlation between TEM and non-mixing state

	Non-mixing state	Mixing state
Edge $r_{\text{eff}}/a_{99} = 0.9$	TEM destabilized	TEM stabilized
Core $r_{\text{eff}}/a_{99} = 0.5$	ITG destabilized	ITG destabilized

