Multi-machine analysis of turbulent transport in helical systems via gyrokinetic simulation

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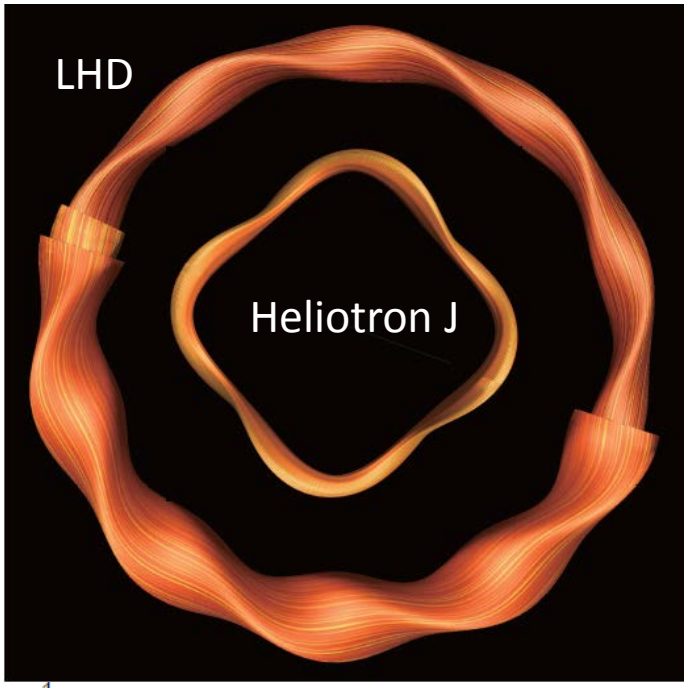
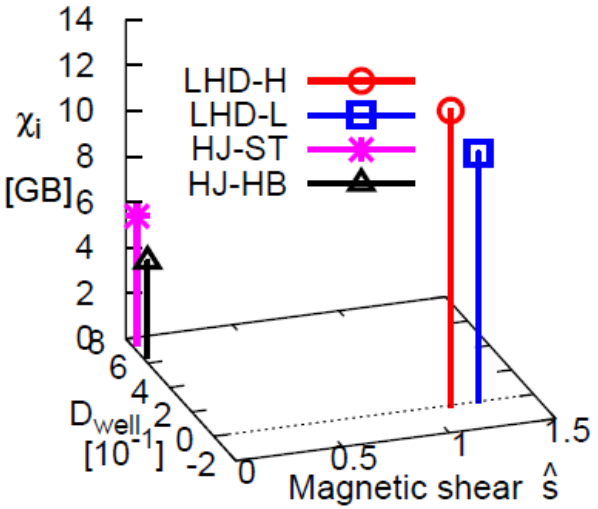
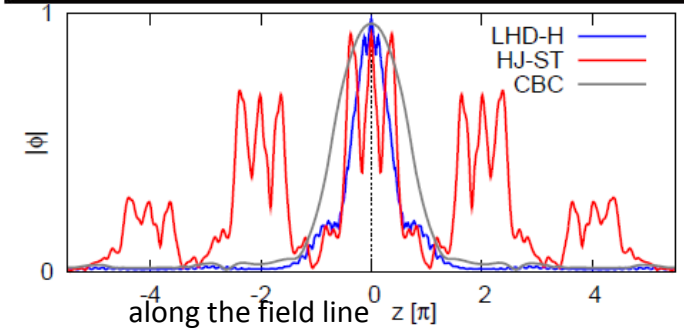


	LHD-L	HJ-ST
$\hat{s}$	1.2	0.023
D_{well}	-0.01	0.74
Instability	ITG	ITG
$\gamma\ [v_{Ti}/R_0]$	0.27	0.4
$\chi_i\ [v_{Ti}\rho_{Ti}^2/R_0]$	11.	5.9
$\chi_e\ [v_{Ti}\rho_{Ti}^2/R_0]$	4.8	2.4





- The neoclassical optimization suppresses turbulent heat transport in LHD and in Heliotron J.
- Turbulent transport in HJ is lower than that in LHD in GB unit. Lower mixing-length estimate and higher amplitude of zonal flows can be the mechanism.
- Heliotron J has more elongated mode structure than LHD along the field line.