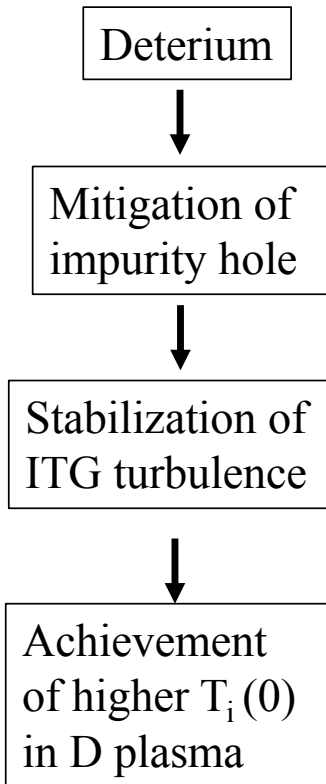


# Isotope effect on impurity transport and heat transport (K.Ida EX/10-1)

Isotope effect on transport was found to have two steps in LHD.  
 Primary effect → enhance the inward convection of impurity  
 Secondary effect → peaked carbon density profile  
 contributes to the reduction of turbulence



The sign of the convection of carbon impurity in the ITB region is positive in hydrogen plasma and negative in deuterium plasma  
 hollow (H) → peaked (D) : Primary effect

Peaked carbon density profile weakens the ITG instabilities  
 K.Kim, et. al. Phys Plasma 24 (2017) 062302

Peaked carbon density contributes to the achievement and sustainment of higher ion temperature in deuterium plasma  
 $T_i(D) > T_i(H)$  : Secondary effect

