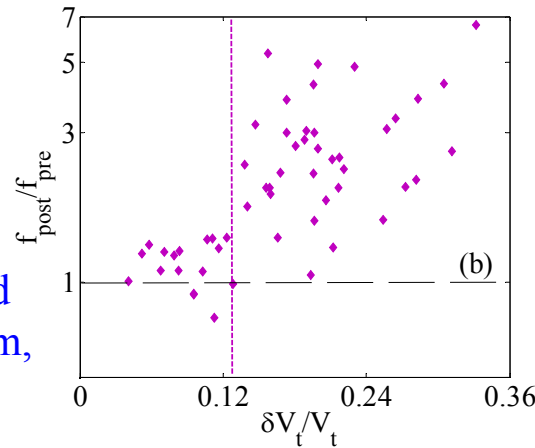
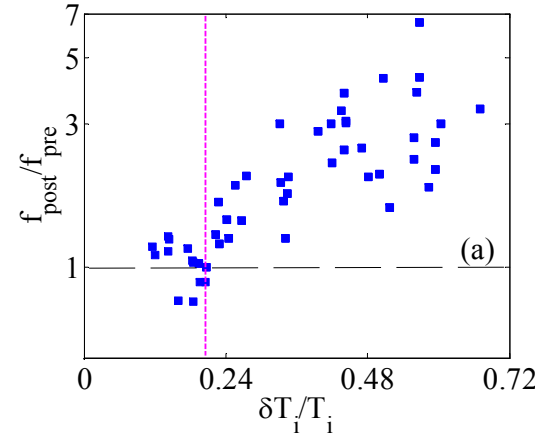
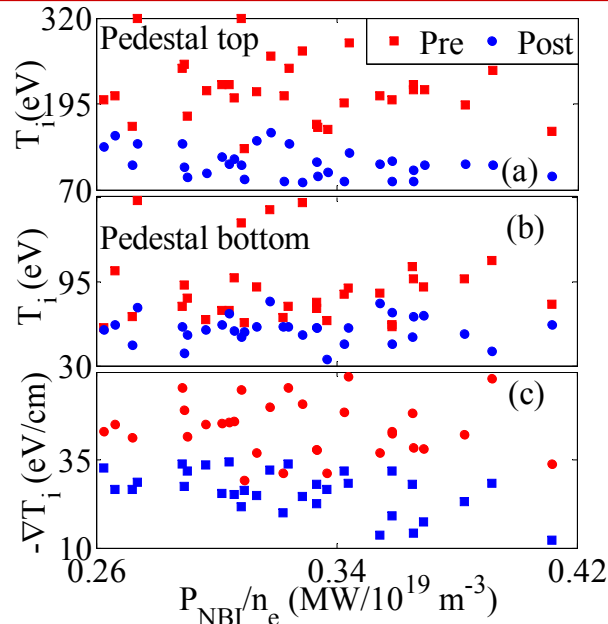




# Role of the ion temperature and toroidal rotation during the ELM mitigation by SMBI

HL-2A



- ◆ Ion temperature ( $T_i$ ) and toroidal rotation ( $V_t$ ) is measured by a high time and spatial resolution CXRS;
- ◆  $T_i$  decreases by around half and one third at the pedestal top and at the pedestal bottom, respectively;
- ◆ The temperature gradient decreases by more than one third;
- ◆ The pedestal width is diminished by about one third.

- ◆  $f_{\text{post}}$  and  $f_{\text{pre}}$  mean the ELM frequency post and before the SMBI, respectively;
- ◆ To successfully increase the ELM frequency, about 20% and 13% of relative decrements of  $T_i$  and  $V_t$  should be achieved;
- ◆ The increment of ELM frequency is more sensitive to  $\delta V_t/V_t$  rather than  $\delta T_i/T_i$ .
- ◆ SMBI deposition in the pedestal decreases the ion temperature and rotation, and this may be the main effect on the radial electric field.