

# ATF DR Emittance in Apr.-Jun. Operation 2012

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DR emittance tuning

DR emittance summary

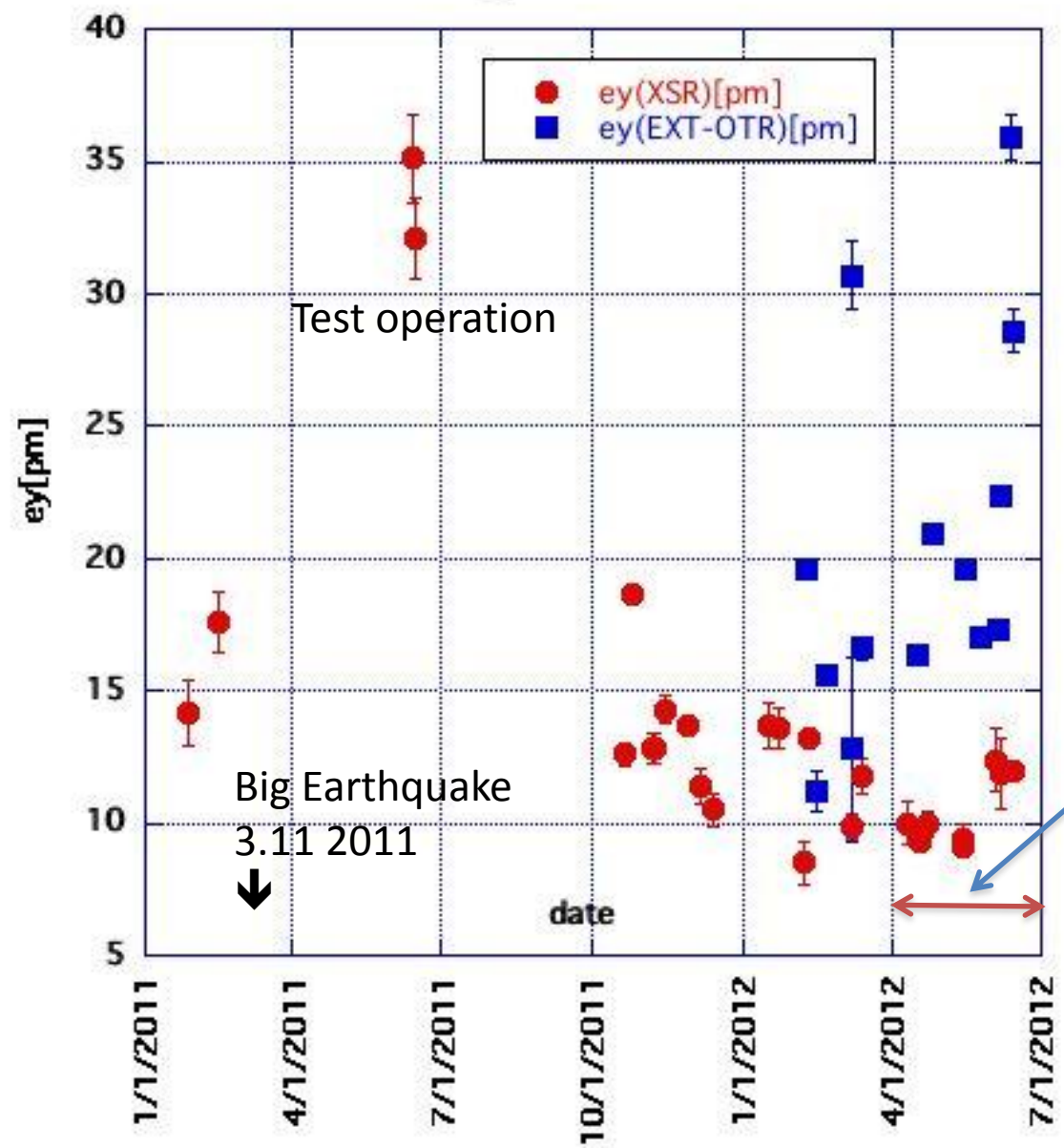
Effect of  $dE/E$  , DR current,...

# Emittance Tuning

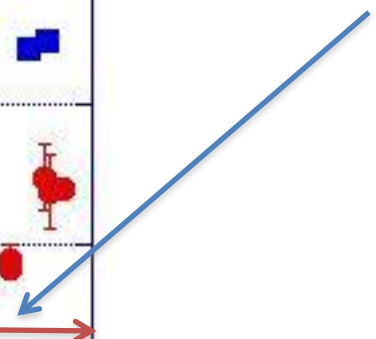
- Emittance tuning is as is usual;
  - Dispersion Correction
  - Coupling Correction
- Tuning is done usually once a week, at start-up shift.
- XSR monitors beam size always, but by@XSR is measured about once a week.
- Beta beat correction by QM trim coil on 4-5<sup>th</sup> Jun.

# Emittance Summary

EmityDREXT2011-12



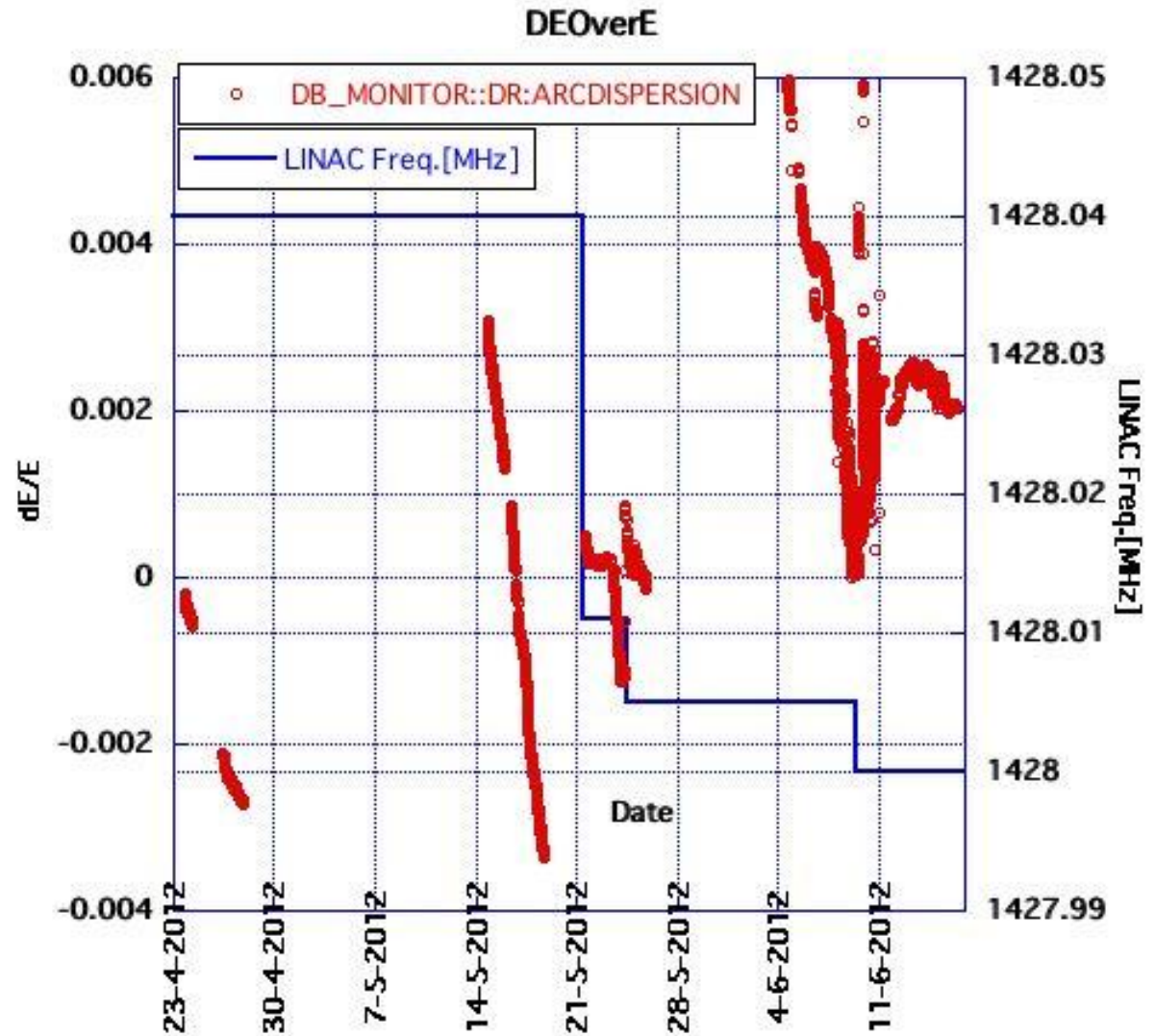
Emittance in DR is around 10-12 pm



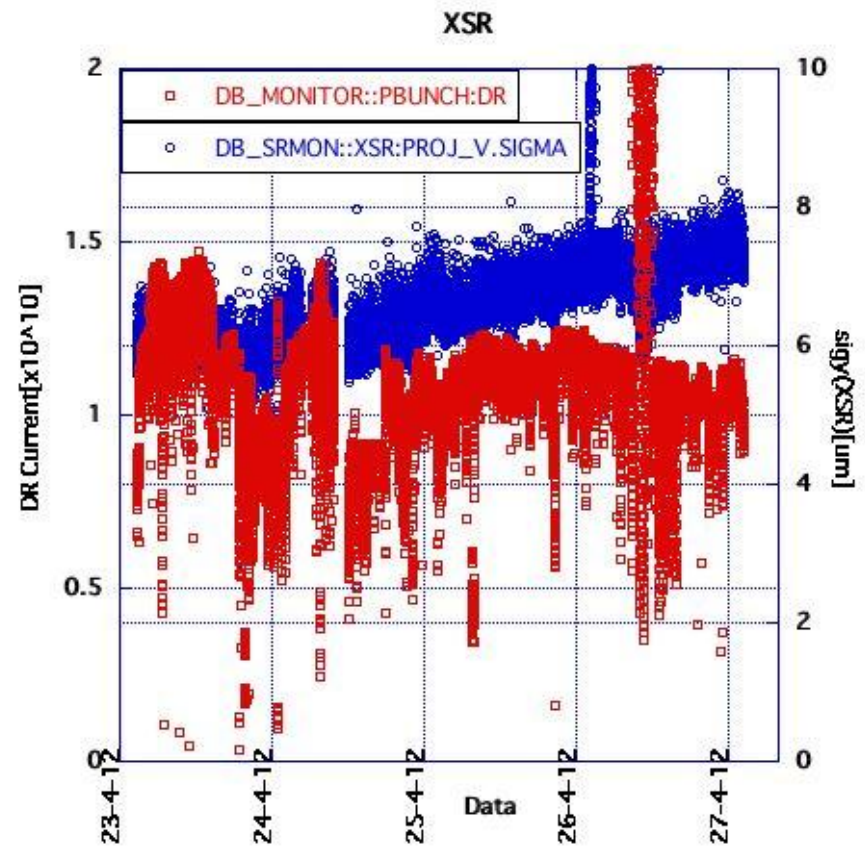
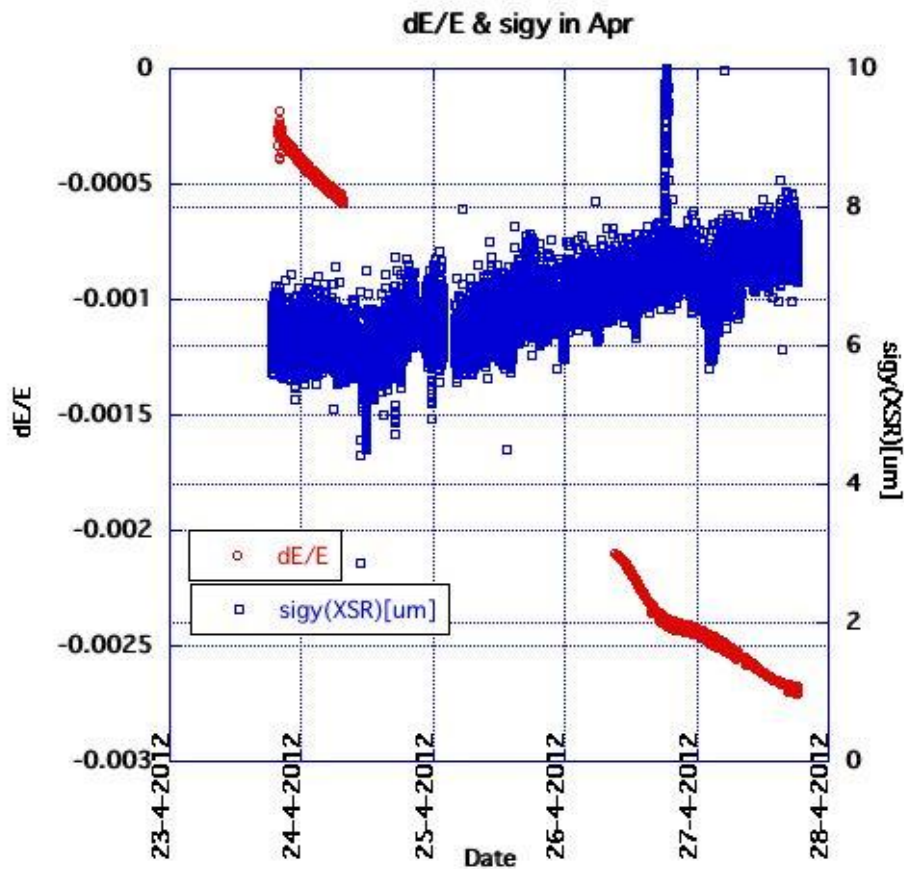
# dE/E Measurement

- dE/E is calculated as  $\langle x/\eta \rangle$  in DR arc( K.Kubo ).
- dE/E change  $\leftrightarrow$  DR circumference change

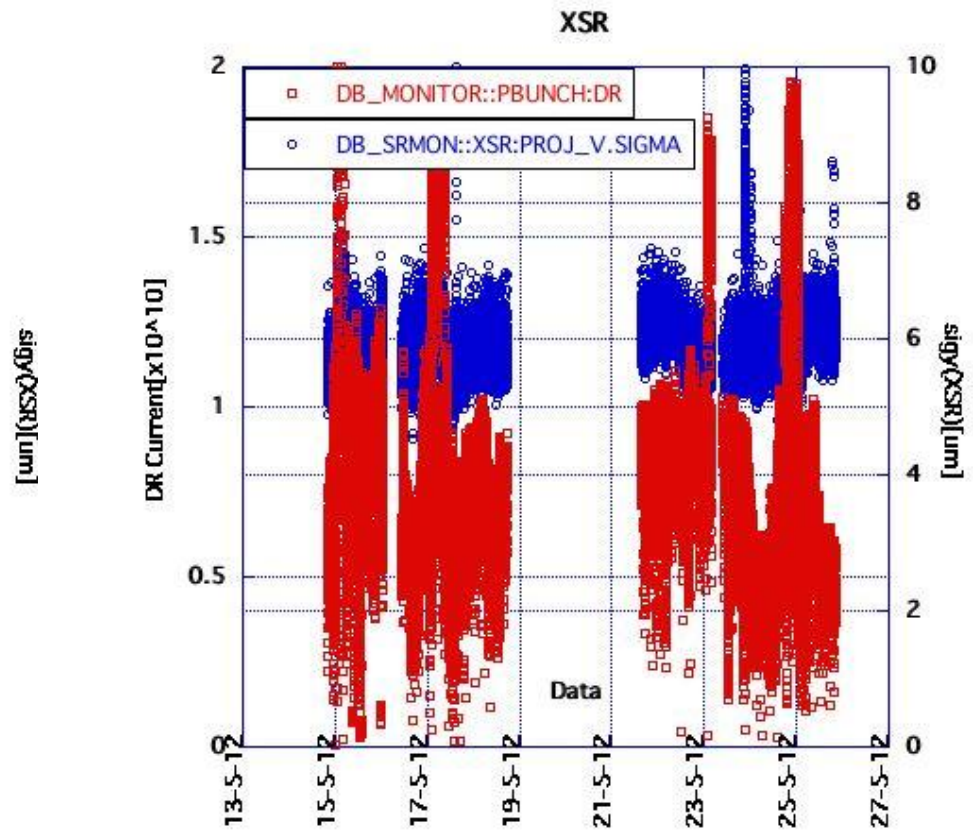
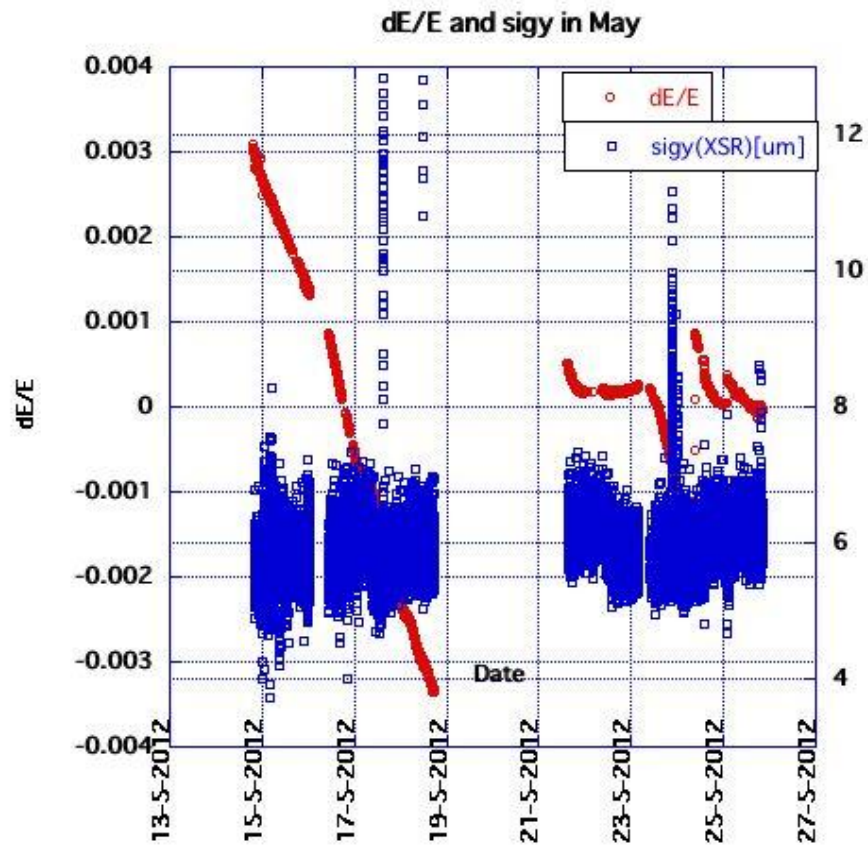
LINAC frequency is changed to compensate dE/E.



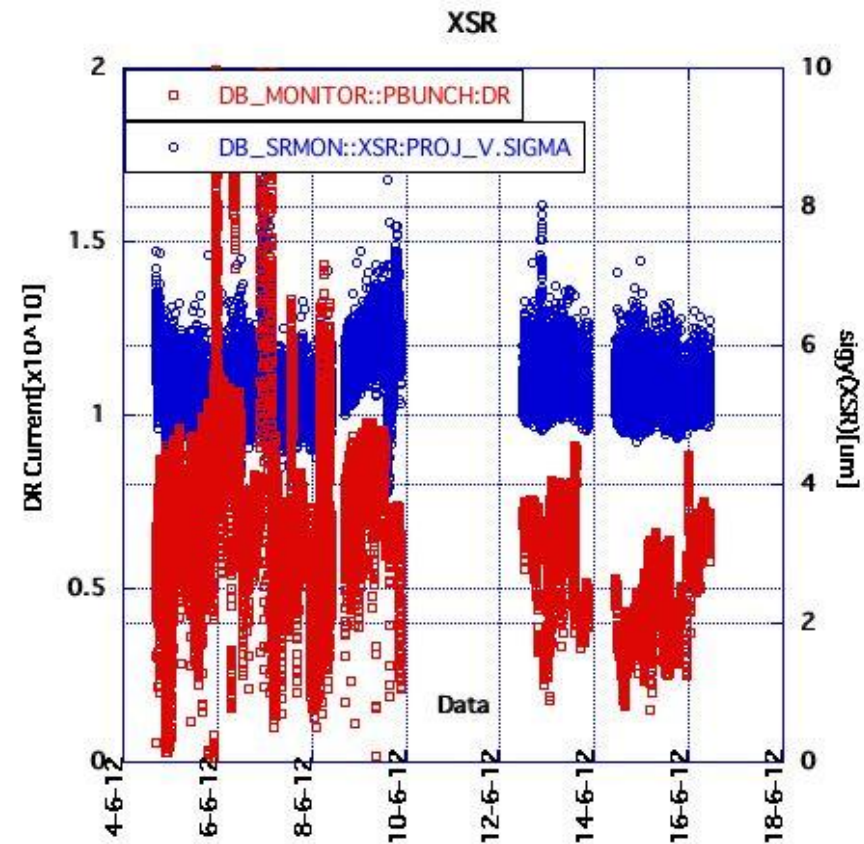
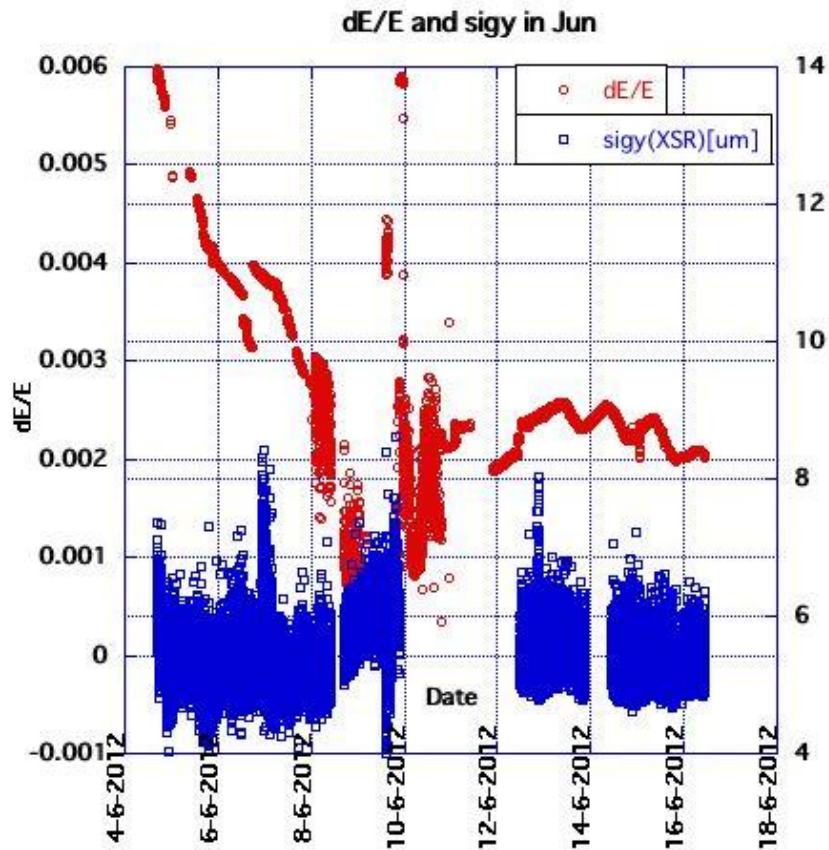
# Emittance and $dE/E$ , I (Apr.)



# Emittance and $dE/E$ , I (May)

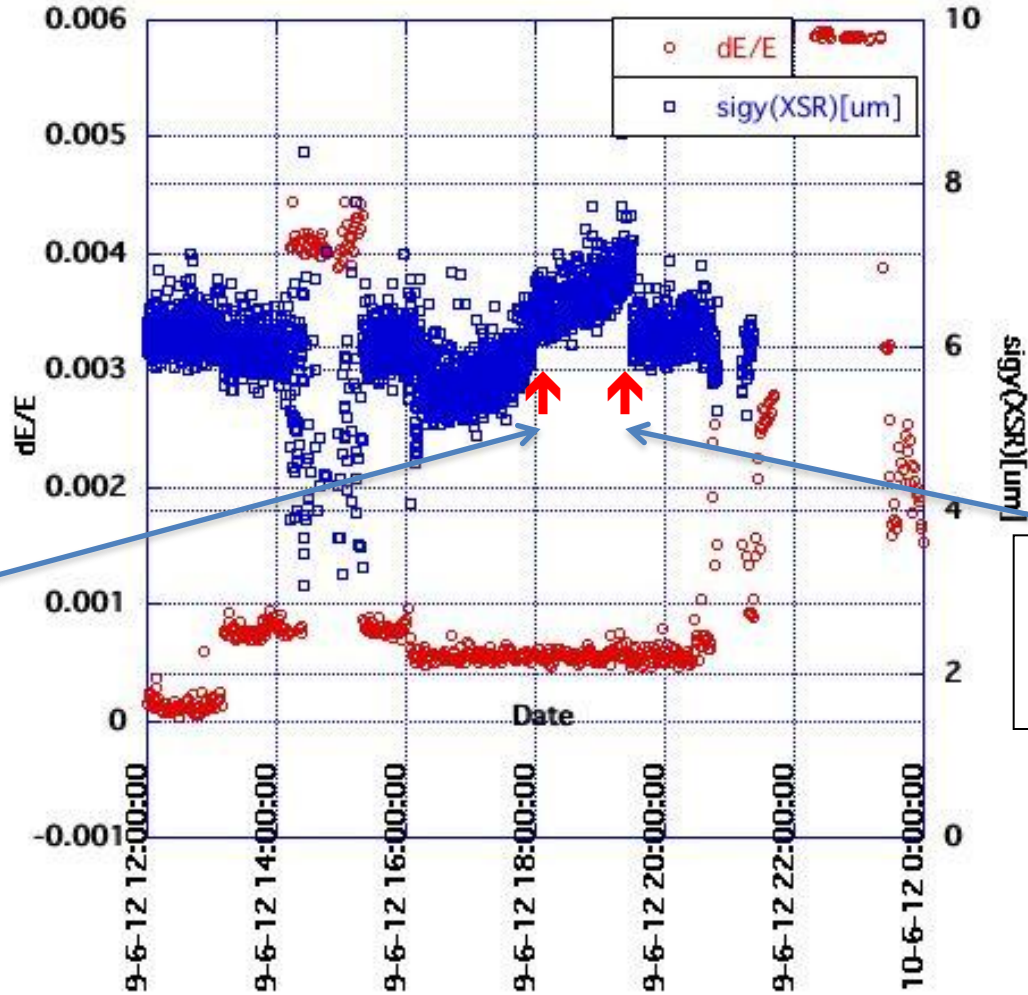


# Emittance and dE/E, I (Jun.)



# Effect of DR orbit feedback

dE/E and sigy on 9th Jun



DR FB ON

DR FB OFF and DR correctors were reset.



# Summary

- DR vertical emittance is about 10-12pm in Apr.-Jun. run.
- At that time, very big drift in  $dE/E$  was observed, but the effect to the emittance is not clear.
- DR orbit FB might affect the emittance. Dispersion correction at the same time?