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## **P4.049 Effect of temperature on magnetic measurements in KSTAR tokamak**

*Thursday, 20 September 2018 11:00 (2 hours)*

KSTAR plasma experiments have been carried out without baking the inner wall (called as cold wall condition) until 2016. The drift ( $\Delta V_{sen}/V_{sen}$ ) in magnetic sensor signal was able to satisfy with the requirement for the plasma control by adjusting the offset level of the input in the integrator for several the vacuum shots. Here, the required value of ( $\Delta V_{sen}/V_{sen}$ ) should be below 2 % during 60 s.

However, plasma experiments are performed after the temperature on the inner wall reaches up to 150 ° (called as hot wall condition ) in the experimental campaign of 2017 in order to achieve better plasma performance due to lower recycling from the wall during a plasma discharge.

As the temperature of the magnetic sensor increases, the drift of the integrator also increases and exceeds the desired limit above. Hence, adjusting the offset was performed again with hot wall condition to achieve the previously desired limit for plasma control. Consequently, in the 2017 plasma experiment the drift variation did not differ significantly between hot and cold wall conditions, even up to 100 s.

In this presentation, we explain the measures for the drift of the integrator by hot wall and cold wall.

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