Electric Probe Measurements during ELM mitigations in Edge Plasmas of KSTAR device

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Effect of the edge localized mode (ELM) mitigations on the plasma parameters is investigated at the edge region by poloidal and divertor electric probes. Divertor probes are extruded 1mm from the wall, and measured floating potential ($V_f$) and ion saturation current ($I_{sat}$) [1]. Poloidal probes located ~ 10cm below from the last closed flux surface (LCFS) near mid-plane of KSTAR and measured electron temperature ($T_e$), electron density ($n_e$), floating potential ($V_f$). H-mode experiments were conducted under the following conditions: $B_T = 2 - 3$ T, $N_{e\text{core}} = \sim10^{19}$ m$^{-3}$, $\kappa = 1.8 - 1.9$, $P_{NBI} = \sim2.8$ MW. Measured value of the electron temperature is 5 - 10 eV and the electron density is $\sim10^{16} - \sim10^{17}$ m$^{-3}$ at the position of poloidal electric probes (far SOL). Change of plasma parameters has been investigated by those probes near two strike points and the place of poloidal probes. The plasma parameters were analyzed when the ELMs were mitigated by resonant magnetic perturbation (RMP) and supersonic molecular beam injection (SMBI) methods. Based upon the measurement of electron temperature, floating potential and ion saturation current, the effect of ELM mitigations on the edge plasma parameters is to be explained.