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Measurement of Plasma Parameters in the Plasma Generator of KSTAR NBI during Beam Extraction

The neutral beam injection (NBI) system in KSTAR (Korea Superconductor Tokamak Advanced Research) provide heating and current drive to KSTAR tokamak plasma. It is composed of a plasma generator, an accelerator, and neutralizers. The plasma generator and the neutralizer decide the plasma chemistry and finally the beam fraction while the accelerator decides the beam optics. In general, the plasma characteristics of the plasma generator is measured without the accelerator activation, but it can be varied during beam extraction due to the ion extraction and the back stream electrons. In this presentation, the plasma parameters during the beam extraction and its time evolution is compared to the quiet plasma (without accelerator activation). The collisional-radiative (CR) modeling based OES is used for plasma measurement.

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