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Observation of edge turbulence spread by ECEI on the ELM-crash-suppressed plasmas in the KSTAR[1] JAEHYUN LEE, MINJUN CHOI, GUNSU YUN, POSTECH, WOOCHANG LEE, UNIST, HYEON K. PARK, UNIST, NFRI, NEVILLE C. LUHMANN, JR., UC Davis — The structure and dynamics of the ELM and edge turbulence modified by $n = 1$ RMP have been studied during the ELM-crash-suppression phase by applying correlation analysis techniques on the measured ECEI signals. The ECEI shows that filamentary modes remained at theedge with frequent bursts during ELM-crash-suppression phase. The filamentary mode fluctuates in the range of 20 kHz and the dynamics of the mode seems to be violent and complex compared to the ELMing H-mode phase. Correlation analysis shows corresponding fluctuations have long poloidal wavelength (or small poloidal wavenumber $k_\theta < 1$ cm^{-1}) with smaller size compared to the filamentary mode, and average group velocity of ~ 3 km/s along the electron diamagnetic direction, parallel wavelengths in the range of $2 < \lambda_{||} < 8$ m. The characteristic size in the order of $k_\theta \rho_s \sim 0.1$ and velocimetry analysis suggest the resistive ballooning mode is a strong candidate for edge fluctuation in the ELM-crash-suppression phase.

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