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Modulated LHCD with Feedback control to Active Suppress MHD $m=2$ on HT-7¹ J.S. MAO, J.R. LUO, Y.W. SUN, B.J. DING, Institute of Plasma Physics, Chinese Academy of Sciences — A crucial issue for the extension of advanced tokamak scenarios to long pulse operation is the avoidance of Magneto-Hydrodynamics (MHD) activity. Active Modulation of Lower Hybrid Current Drive (LHCD) was used successfully to suppress MHD activity on HT-7, a superconducting tokamak. A feedback system was used which activated modulation only when MHD activity reach a predetermined level so as to optimize the current drive through out the discharge. The LHCD modulation was varied in power and frequency, with the frequency always being less than the resistive skin time (100ms). Optimal MHD suppression was achieved when modulating LHW power $> 200\text{kW}$, and frequency of 50Hz. Details of the MHD suppression will be discussed in this poster. Active Modulation of LHCD was used successfully to suppress MHD activity. This was achieved in discharges with MHD $m=2$ tearing modes during the discharge conditions $I_p=110\text{KA}$, $B_t=1.75\text{T}$, $N_e\sim 1.1\times 10^{13}\text{cm}^{-3}$. The amplitude, interval and the period of LHCD modulation pulse can be adjusted very conveniently. The modulation LHCD can be delivered very fast at the any time during the discharge. The modulation LHCD period was always much shorter than the plasma resistive time. So the profile of plasma current is changed much fast than the plasma resistive time. The different forms of LHCD modulating can be proved.

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