**Real-time correction of modulator in dispersion interferometer on   
HL-2M**

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To meet the requirement of electron density measurement on HL-2M, a single channel CO2 dispersion interferometer based on second harmonic generation technology has been developed and commissioned on HL-2M Tokamak. In series of discharge experiments, a slowly varying delay of reference signal provided by the modulator caused a phase drift and introduced an extra error of up to 10 degrees. An extra phase correction method is applied on the data processing system to calculate the delay and to eliminate the extra phase drift. An additional phase-tracking method is introduced to eliminate unexpected phase flip in phase correction. These methods are included in data analyzing code and FPGA. The FPGA can derive the phase of delay every 0.1 ms to provide real-time phase drift correction in density feed-back signals. The phase drift occurs no more in 10 seconds measurement with the phase correction method.

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