

Abstract Submitted
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Absolute calibration of Phase Contrast Imaging on HL-2A tokamak.¹ YI YU, SHAOBO GONG, University of Science and Technology of China, MIN XU, Southwestern Institute of Physics, YIFAN WU, BODA YUAN, MINYOU YE, University of Science and Technology of China, XURU DUAN, Southwestern Institute of Physics, HL-2A TEAM TEAM — Phase contrast imaging (PCI) has recently been developed on HL-2A tokamak. In this article we present the calibration of this diagnostic. This system is to diagnose chord integral density fluctuations by measuring the phase shift of a CO₂ laser beam with a wavelength of 10.6 μm when the laser beam passes through plasma. Sound waves are used to calibrate PCI diagnostic. The signal series in different PCI channels show a pronounced modulation of incident laser beam by the sound wave. Frequency-wavenumber spectrum is achieved. Calibrations by sound waves with different frequencies exhibit a maximal wavenumber response of 12 cm^{-1} . The conversion relationship between the chord integral plasma density fluctuation and the signal intensity is $2.310^{13} \text{ m}^{-2}/\text{mV}$, indicating a high sensitivity.

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