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Faraday-Effect Polarimeter-Interferometer System for current density measurement on EAST[1] HAIQING LIU, YINXIAN JIE, Institute of Plasma Physics, Chinese Academy of Sciences (ASIPP), WEIXING DING, DAVID LYN BROWER, Department of Physics and Astronomy, University of California Los Angeles, ZHIYONG ZOU, WEIMING LI, JINPING QIAN, YAO YANG, LONG ZENG, Institute of Plasma Physics, Chinese Academy of Sciences (ASIPP), TING LAN, GONGSHUN LI, University of Science and Technology of China, LIQUN HU, BAONIAN WAN, Institute of Plasma Physics, Chinese Academy of Sciences (ASIPP) — A multichannel far-infrared laser-based **PO**larimeter-**INT**erferometer (**POINT**) system utilizing the three-wave technique is under development for current density and electron density profile measurements in the EAST tokamak. Novel molybdenum retro-reflectors are mounted in the inside wall for the double-pass optical arrangement. A Digital Phase Detector with 250 kHz bandwidth, which will provide real-time Faraday rotation angle and density phase shift output, have been developed for use on the POINT system. System time response ($\sim$ 1 microsecond) and phase resolution ($<0.1^\circ$) allows resolution of fast equilibrium changes associated with MHD events. Initial calibration indicates the electron line-integrated density resolution is less than $5 \times 10^{16}\mathrm{m}^{-2}$ ($\sim 2^\circ$), and the Faraday rotation angle rms phase noise is $<0.1^\circ$. Initial results of POINT system will be presented.

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Haiqing Liu
Institute of Plasma Physics, Chinese Academy of Sciences (ASIPP)

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