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Electron Cyclotron Emission Imaging on ITER with Rowland Circle Optics JASON LIU, UC Berkeley, WOOCHANG LEE, Ulsan National Institute of Science and Technology, JUNE-EOK LEEM, Pohang University of Science and Technology, MANFRED BITTER, Princeton Plasma Physics Laboratory, HYEON PARK, Ulsan National Institute of Science and Technology, GUNSU YUN, Pohang University of Science and Technology — The implementation of advanced electron cyclotron emission imaging (ECEI) systems on the major tokamaks TEXTOR[1], DIII-D[2,3], KSTAR[4], EAST[5], and ASDEX Upgrade[6] has revolutionized the diagnosis of MHD activities and improved our understanding of various instabilities. However, the conventional ECEI systems cannot be applied to ITER because of the space constraints and excessive radiation that would be encountered in the diagnostic port plugs. This paper describes an alternative optical concept that employs the Rowland circle imaging geometry to implement an advanced ECEI system on ITER that is suitable for the tight space and harsh environments of the diagnostic port plugs. Such a system would match the capabilities of conventional ECEI diagnostics and would be capable of simultaneous core and edge measurements.

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