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# Electron Cyclotron Emission Imaging of Magnetic Fusion Plasmas

2D Electron Cyclotron Emission Imaging (ECEI) is a unique radiometric technique for real time imaging of the high temperature structures and fluctuations in toroidal fusion devices with high spatial and temporal resolution. Since the initial prototype system installed on the TEXTOR tokamak, it has matured into a powerful diagnostic tool for plasma visualization with systems installed on major fusion devices around the world including AUG, DIII-D, EAST, HL-2A and KSTAR. ECEI systems have contributed greatly to the understanding of core MHD physics such as Alfvén eigenmodes, sawteeth, Neoclassical Tearing Modes, and Edge Localized Modes. Details regarding the ECEI technique, as well as new advances in ECEI hardware and analysis techniques which continue to expand the scope and flexibility of the diagnostic, will be presented.

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