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EX/P8-15: Study of Runaway Electron Generation in Synergetic ECRH & SMBI Plasma and during Major Disruptions in the HL-2A Tokamak

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Runaway electron (RE) is a crucial issue in achieving safe tokamak operation due to its sever threat to tokamak machines when they hit the first wall, especially during disruptions. Therefore, investigations on the behaviour of REs and the evolution of disruption generated RE beam have been a very active area during the past decades. Anomalous RE enhancement has been recently observed in synergetic ECRH and supersonic molecular beam injection (SMBI) experiments in the HL-2A tokamak. With the aid of the soft X-ray cameras, the detailed time and space resolved images of the long-lived RE beam in flight during major disruptions have been observed and these allow a detailed analysis of the generation and evolution of the disruption generated RE beam in a major disruption. In this paper, the RE generation in synergetic ECRH & SMBI plasma and during major disruptions in the HL-2A tokamak will be demonstrated and discussed.

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