Contribution ID: **19** Type: **Poster**

Influence of microwave parameters on the afterglow beam

Thursday, 11 September 2025 11:15 (1h 45m)

Heavy ion synchrotron accelerators rely on intense pulsed beams of highly charged ions. The production of these pulsed beams from an electron cyclotron resonance (ECR) ion source is predominantly achieved through the afterglow mode. However, the influence of microwave parameters on the characteristics of afterglow beams in high-frequency, high-power and large plasma-volume ion sources remains underexplored. Recently, a series of experiments were conducted with a third-generation superconducting ECR ion source. The effects of key microwave parameters, including the power level and pulse length of the secondary microwave source, as well as the RF-off time of the primary microwave radiation, on xenon afterglow beam currents are systematically examined. The experimental results and conclusions derived from the data are presented in this article.

Primary authors: ZHAO, Hongwei (Institute of Modern Physics (IMP), Chinese Academy of Sciences (CAS)); LI, Jibo (Institute of Modern Physics (IMP), Chinese Academy of Sciences (CAS)); SUN, Liangting (Institute of Modern Physics (IMP), Chinese Academy of Sciences (CAS)); TARVAINEN, Olli (STFC); LU, Wang (Institute of Modern Physics (IMP), Chinese Academy of Sciences (CAS)); WANG, Xinyu (Institute of Modern Physics (IMP), Chinese Academy of Sciences (CAS)); 李, 立轩

Presenter: 李, 立轩

Session Classification: Poster Session

Track Classification: Fundamental processes in ion sources and plasmas