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## **Progress towards 28 GHz operations of ECR ion sources at the Facility for Rare Isotope Beams (FRIB)**

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This paper review progress being made with FRIB superconducting ion source and the first results at 28 GHz operation. FRIB has now been in operations for over 3 years and deliver beam to the nuclear physics users with up to 20kW beam power on target. This beam power was achieved for many primary beams including Uranium and has been used routinely for experiments over the past year. In preparation to the next step at 50kW, over 100euA of U35+ has been obtained when coupling 2.5kW at 28GHz. This presentation goes over the operation of the ECR ion sources at FRIB with emphasis on the 28 GHz ECR ion source including solid beam and new beam development.

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