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## **SEISM: 60 GHz ECR Ion Source for Future Accelerator**

*Thursday 23 September 2021 10:40 (20 minutes)*

SEISM is a unique ECR ion source operating at a frequency of 60 GHz. The prototype is based on a simple magnetic geometry, the CUSP, allowing the use of polyhelix coils (developed with LNCMI, Grenoble) to generate the closed ECR surface at 2.1 T. The plasma is sustained by a high intensity HF pulse (up to 300 kW). Previous experiments at LNCMI have successfully demonstrated the establishment of the nominal magnetic field and the extraction of ion beams with a current density of up to  $\sim 1 \text{ A/cm}^2$ . The presence of “afterglow” peaks was also observed, proving the existence of ion confinement in a CUSP ECR source. An experimental campaign will be carried out in 2021 using a new transport line designed to improve the transmission of the beam to the new detectors. Recent experimental results as well as short and long-term research plans should be presented to transform this high current density into a high intensity ion beam that can be used for accelerators of the future.

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