

Abstract Submitted
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Ion surfing: a new mode for cryogenic gas catchers, experimental results¹ MAXIME BRODEUR, GEORG BOLLEN, AMANDA GEHRING, DAVID MORRISSEY, GREGORY PANG, MSU/NSCL — A new mode of ion-transport and collection for low-energy precision experiments at projectile fragmentation facilities was recently proposed by Bollen [1]. Present beam thermalization methods use gas-filled linear chambers equipped with sets of electrodes that provide an electrostatic gradient and/or alternating electric fields to transport the ions towards an extraction orifice. A new cryogenic linear gas cell of the National Superconducting Cyclotron Laboratory at Michigan State University will transport ions using only electrodynamic RF fields imposed on a series of linear conductive stripes. Traditionally, the ions migrate along a descending electrostatic potential gradient applied on the individual stripes, called the drag field, which requires a large potential difference to be applied in the gas for transport over long distances. The new method to transport the ions, called “ion surfing,” replaces the drag field with a traveling wave. The new method can transport ions at greater speed while simplifying the overall system. We will present the results of recent measurements for the transport of ^{85}Rb ions over distances up to 40 cm with various gas pressures at room temperature.

[1] G. Bollen, *Int. J. Mass Spect.* **299** (2011) 13

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