

Abstract Submitted
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Ion Surfing: A new ion transport method for cryogenic gas catchers, simulations¹ AMANDA GEHRING, GEORG BOLLEN, MAXIME BRODEUR, DAVE MORRISSEY, NSCL/MSU, GREGORY PANG, LBNL — Gas cells are the tool of choice to thermalize fast rare ion beams produced at projectile fragmentation facilities. After passing through solid degraders, the residual kinetic energy of the ions is dissipated through collisions with the gas atoms and ionization. Previously, ions were directed through a gas cell along a descending electrostatic potential gradient called a “drag field.” Some cells apply a drag field over electrodes with alternating (RF) fields to prevent the rare ions from colliding with the walls. “Ion surfing” is a new method proposed by Bollen [1] which replaces the drag field with a traveling wave superimposed with RF on numerous, thin electrodes. Large potential differences are no longer required for transport over long distances, and the traveling wave can transport ions at a greater speed. This method is being tested for the new cryogenic linear gas cell of the National Superconducting Cyclotron Laboratory at Michigan State University. We will present the concept and simulation results.

[1] G. Bollen, *Int. J. Mass Spect.* 299 (2011) 131

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