

Abstract Submitted
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Fully ElectroStatic Ion Traps for β -decay Studies GUY RON,
Lawrence Berkeley National Lab — Using principles analogous to those of conventional optics it is possible to construct fully electrostatic ion traps which act as a resonant cavity for ion beams. Such traps exhibit an unexpected phenomenon of self-bunching which allows for long lifetimes of trapped ion bunches. Such a trap was originally conceived and developed at the Weimann Institute of Science. Based on this design we are constructing such a trap for use with the LBL IRIS beamline. I will present the principles and design of such a trap. I will further discuss the experimental possibilities afforded, with emphasis on mass spectroscopy and possible measurements of β decay correlations of trapped radioactive ions. Such measurements allow the study of possible standard model extensions affecting the structure of the weak interaction.

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