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PIC code simulation of electromagnetic braking of an antiproton beam using a slow wave structure DOUGLAS YOUNG, Mercer University — There has been a great deal of recent interest in the trapping of antiprotons in magnetic traps for a variety of purposes. One of the problems with constructing these traps is the high energy the antiprotons have after their creation. The standard method for reducing the energy of the antiprotons is to pass a beam through moderators to slow the antiprotons. While this does slow them, it also destroys many of the antiprotons in the process. This poster will examine the use of a slow wave structure as a braking mechanism for an antiproton beam. A slow wave structure is essentially a rippled waveguide. By injecting an electron beam of moderate energy into a rippled waveguide, energy from the beam is converted into electromagnetic energy, typically into microwaves. This poster will present results of computer particle-in-cell simulations using the computer code OOPIC to determine the efficacy of using a slow wave structure as a braking mechanism for an antiproton beam.

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