

Abstract Submitted  
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**Mitigation of Ion Motion in future Plasma Wakefield Accelerators**<sup>1</sup> REZA GHOLIZADEH, TOM KATSOULEAS, PATRIC MUGGLI, University of Southern California, WARREN MORI, University of California Los Angeles — Simulation and analysis of the ion motion in a plasma wakefield accelerator is presented for the parameters required for a future ILC afterburner. We Show that although ion motion leads to substantial emittance growth for extreme parameters of future colliders in the sub-micron transverse beam Size regime, several factors that can mitigate the effect are explored. These include synchrotron radiation damping, plasma density gradients and hot plasmas.

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