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ID: 2698 Initial self-consistent 3-D electron-cloud simulations of LHC beam with the code WARP+POSINST

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Abstract We present initial results from the self-consistent beam-cloud dynamics simulations of a sample LHC beam, using a newly developed set of modeling capability based on a merger of the three-dimensional parallel Particle-In-Cell accelerator code WARP and the electron cloud code POSINST [1,2]. Although the storage ring model we use as a test bed to contain the beam is much simpler and shorter than the LHC, its lattice elements are realistically modeled, as is the beam and the electron cloud dynamics. The simulated mechanisms for generation and absorption of the electrons at the walls are based on previously validated models available in POSINST [3].

Footnotes [1] J.-L. Vay, these proceedings.
[2] J.-L. Vay, Proc. "ECLOUD04", Napa (California), 2004.
[3] M. T. F. Pivi and M. A. Furman , Phys. Rev. STAB, PRSTAB/v6/i3/e034201 .

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Type of Presentation Poster

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