Discovery and Fix of an Error in the Spatial Distribution of Secondary Electrons in the E CLOUD Quadrupole Simulations

Followup to talks of 9 and 16 Dec 2009 and 3 Mar 2010
See also the ILC DR Working Group Meeting of 10 Mar 2010

All material for this talk, including full sets of the analysis plots, may be obtained at www.lepp.cornell.edu/~critten/cesrta/ecloud/17mar10

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Electron Cloud Meeting

17 March 2010
Error in the Spatial Distribution of Secondary Electrons in the ECLoud Quadrupole Simulations

A branch on quadrupole case in the routine for generating secondary electrons erroneously backwards-extrapolated macroparticles outside the v.c. back to the wrong place on the wall.
Algebraic mistakes were made.

I had replaced the code for the dipole case with my own calculation. Now I apply it for all cases.
Complete updated results will be presented at the ILC DR working group meeting 23 Mar 10.
The difference in the cloud snapshots and profiles was much less obvious than in the ILC DR case.
The tune shifts are greater by about 50%.

Fluctuations somewhat reduced, allowing a preliminary conclusion that saturation is not yet reached.

More work on statistics is needed.