Early Results on a Search for Cyclotron Resonances in ECLOUD

-- Collaboration with Eric Wilkinson --

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Electron Cloud Simulations Meeting

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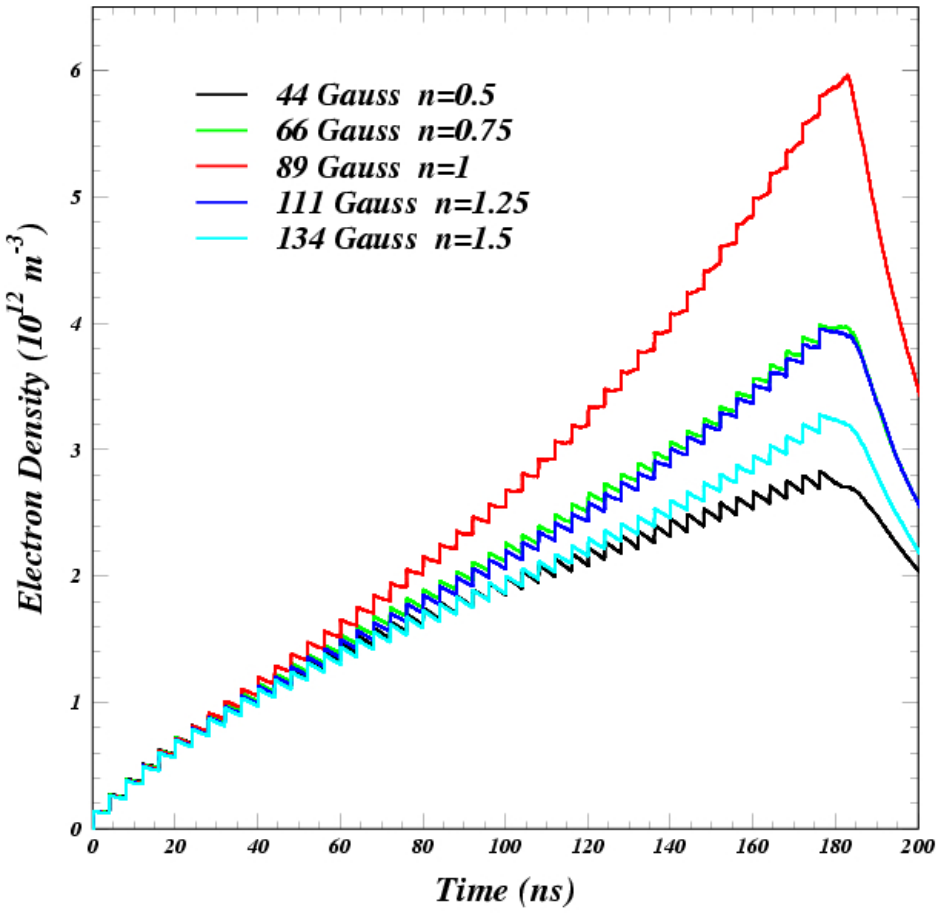
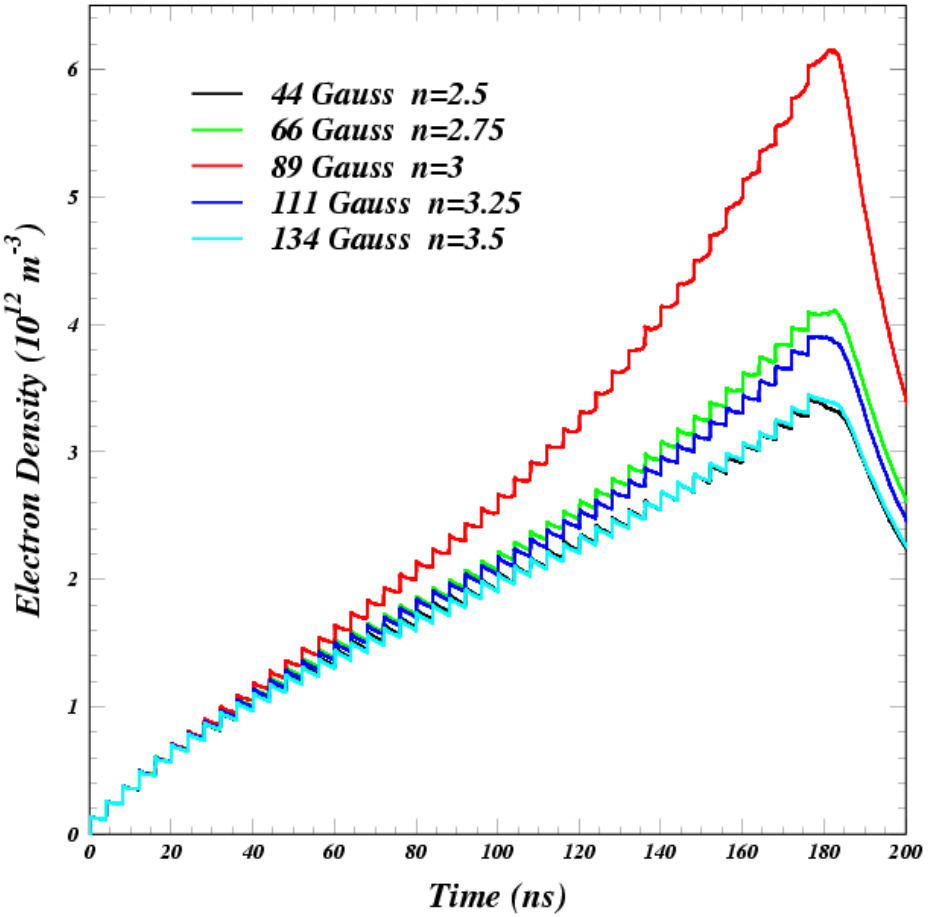
Inspired by June 2009 Measurements

0.025 p.e./e^+ 100% reflectivity $\delta_{max} = 1.4$ $E_{peak} = 195$ eV $I_b = 2E10\ e^+$/bunch (1.25 mA)



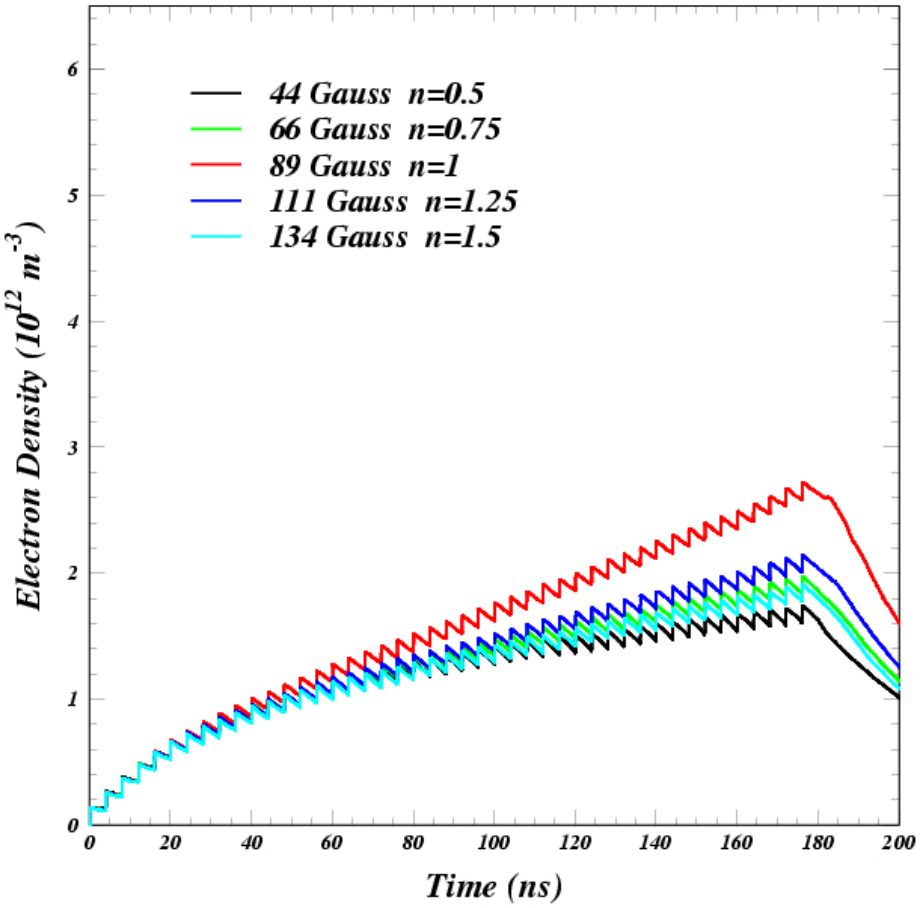


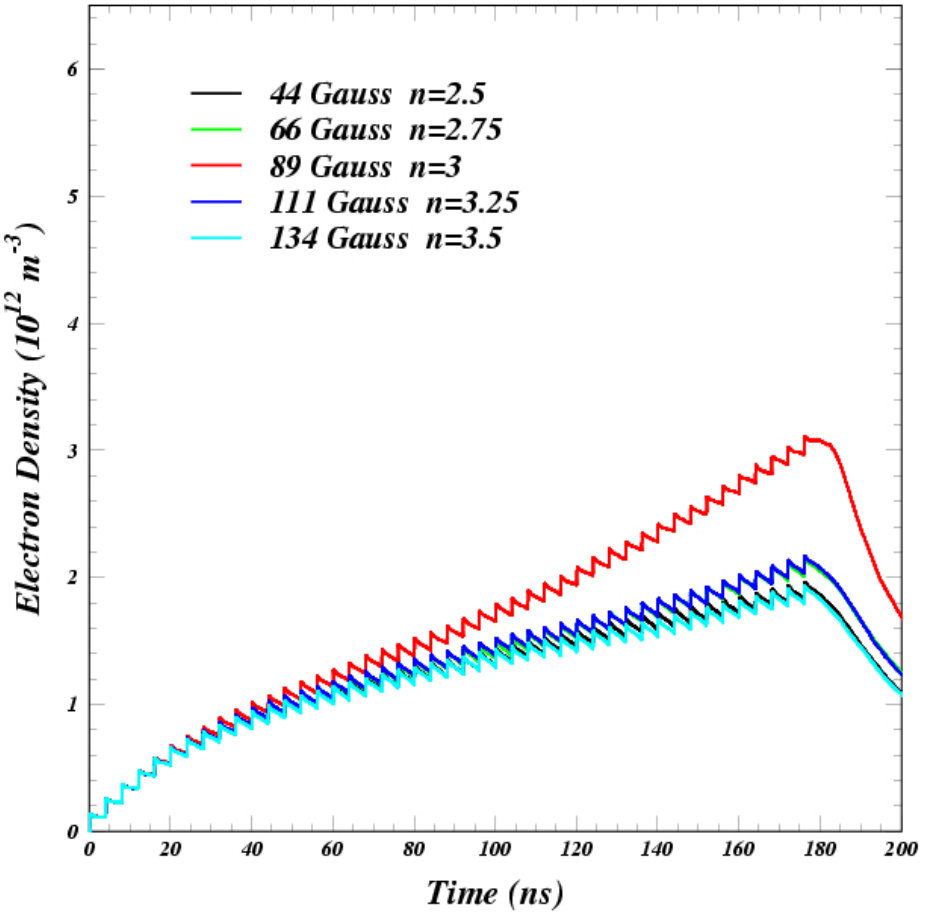
These resonances were not easy to find !

NB: The bunch spacing is only about ten times the bunch length, so n=10 does not show a resonance.

E_{peak} = 195 eV --> 310 eV

0.025 p.e./e^+ 100% reflectivity δ_{max} = 1.4 E_{peak} = 310 eV I_b = 2E10 e^+/bunch (1.25 mA)

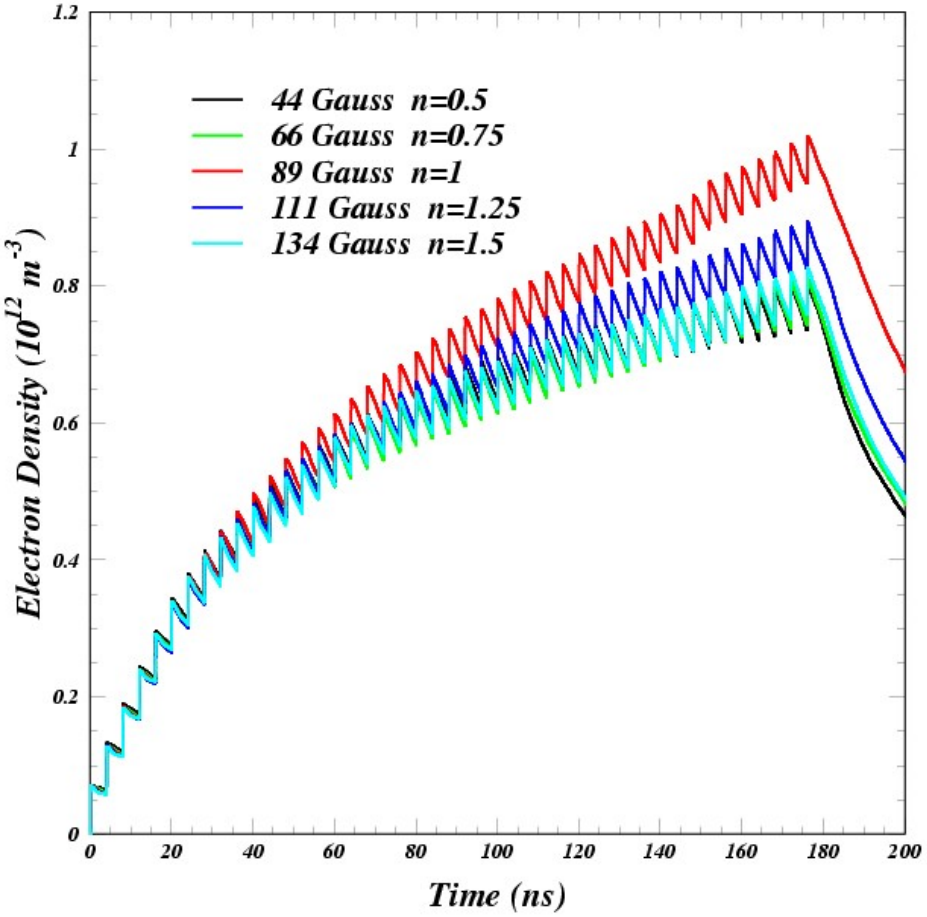


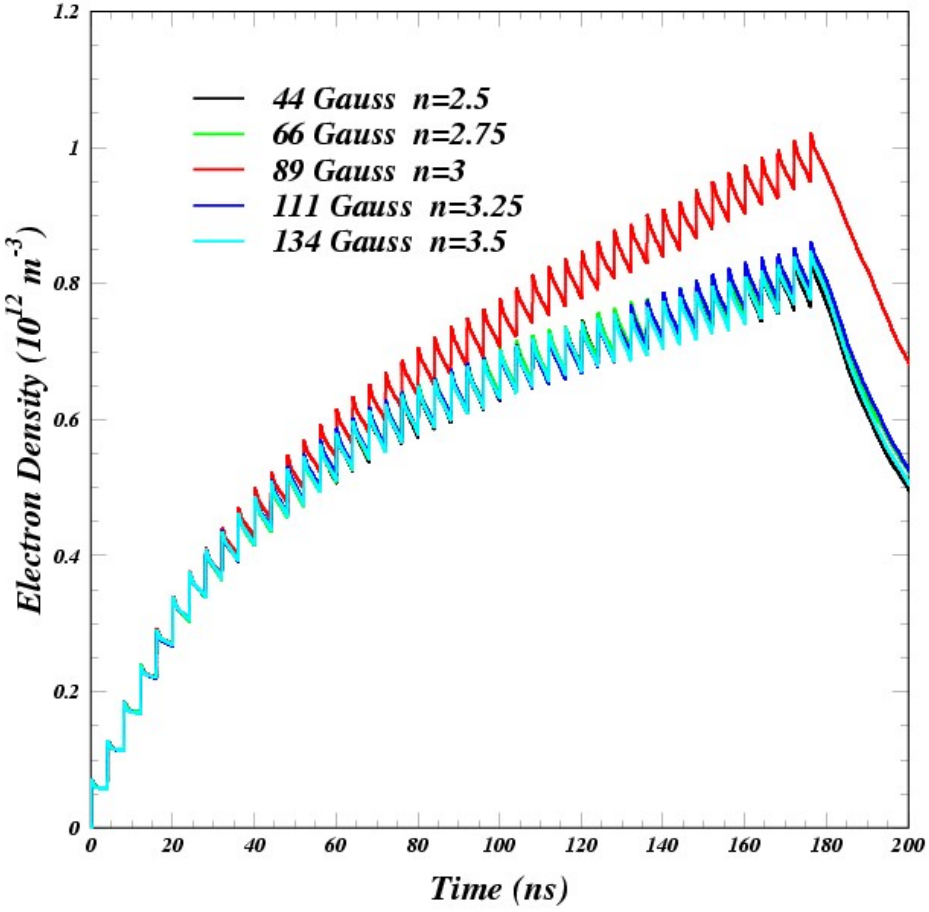


Resonance remains for lower SEY.
Reminder: POSINST modelling for PEP-II found minima rather than maxima at n=1,3.
The cloud may not be reaching saturation for 4 ns spacing.

I_b = 2E10 --> 1E10 (1.25 mA --> 0.625 mA)

0.025 p.e./e^+ 100% reflectivity δ_{max} = 1.4 E_{peak} = 310 eV I_b = 1E10 e^+/bunch (1.25 mA)





Reducing the bunch charge may provide saturation at 4 ns spacing.