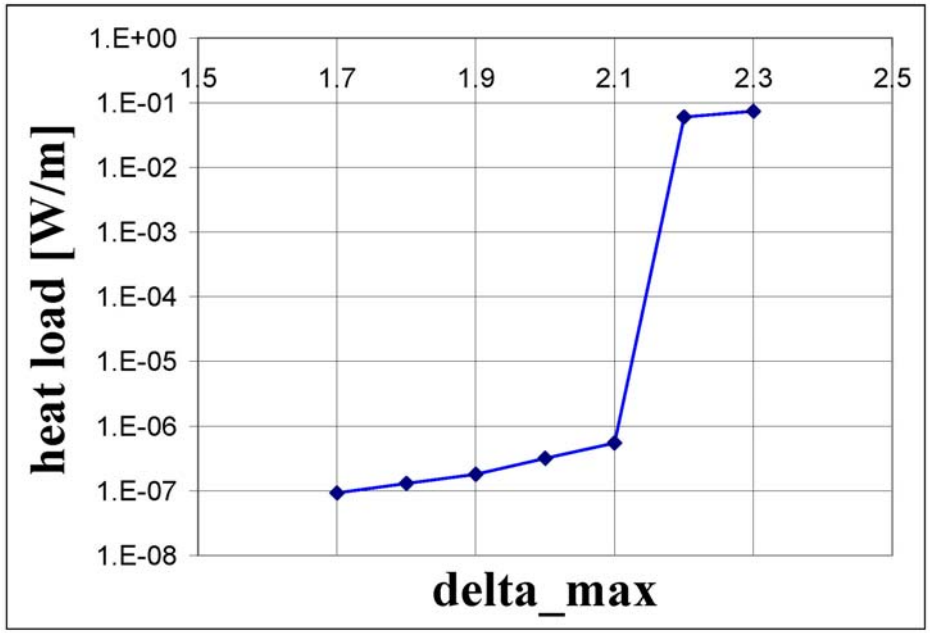
update on electron-cloud simulations

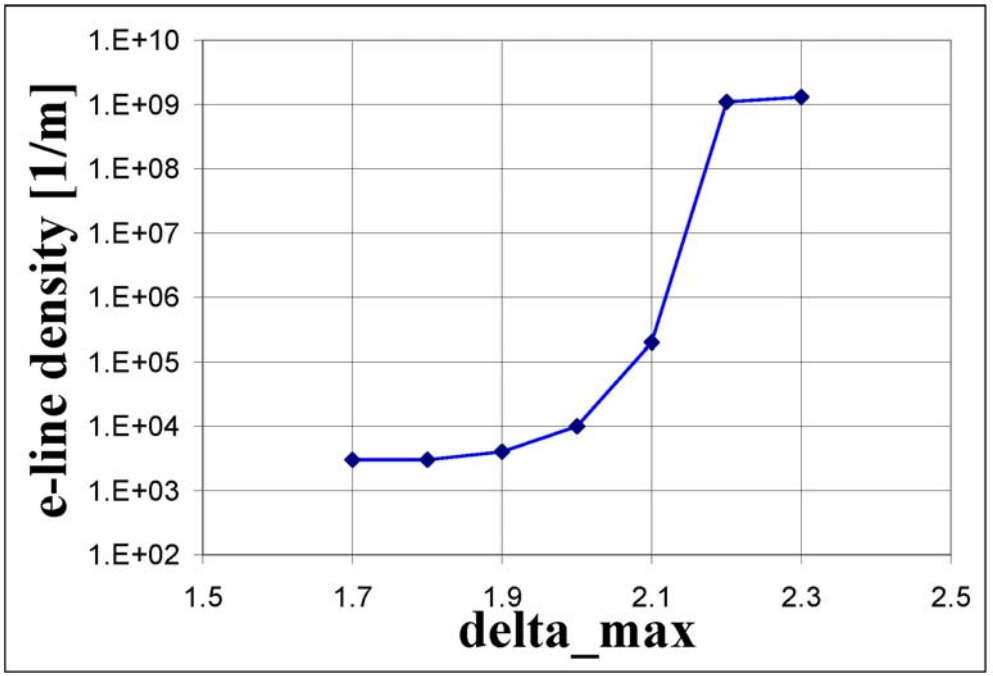
- RHIC
- SPS decay with reflectivity
- LHC quadrupole
- Linacs

RHIC parameters

total bunch length	20 ns (5 σ)
rms bunch length	1.2 m
rms emittance	3.5 μm
proton beam energy	29 GeV
rms transverse size $\sigma_{x,y}$	2 mm
β in arc	10-50 m
chamber diameter	69 mm (round)
bunch spacing	31.95 m
no. of bunches	110
no. of missing bunches	10
primary e- generation rate	3×10^{-9}/m/p
equivalent gas pressure at 300 K	5 ntorr
maximum sec. yield	Variable 1.3-1.9
energy of max. sec. yield ε_{max}	234.5-249 eV
dipole field	0.4 T
bunch population	1.5e11

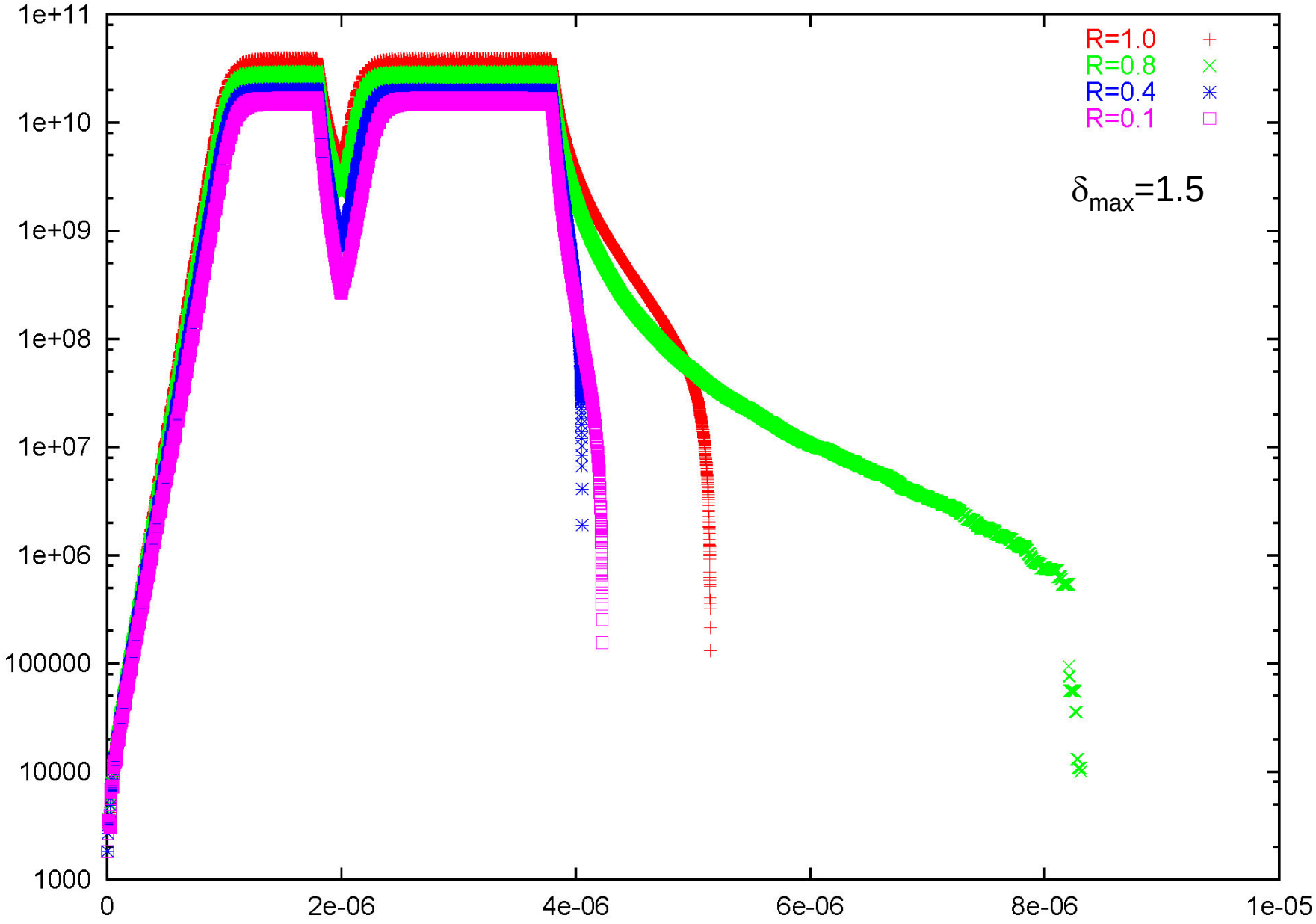


heat load

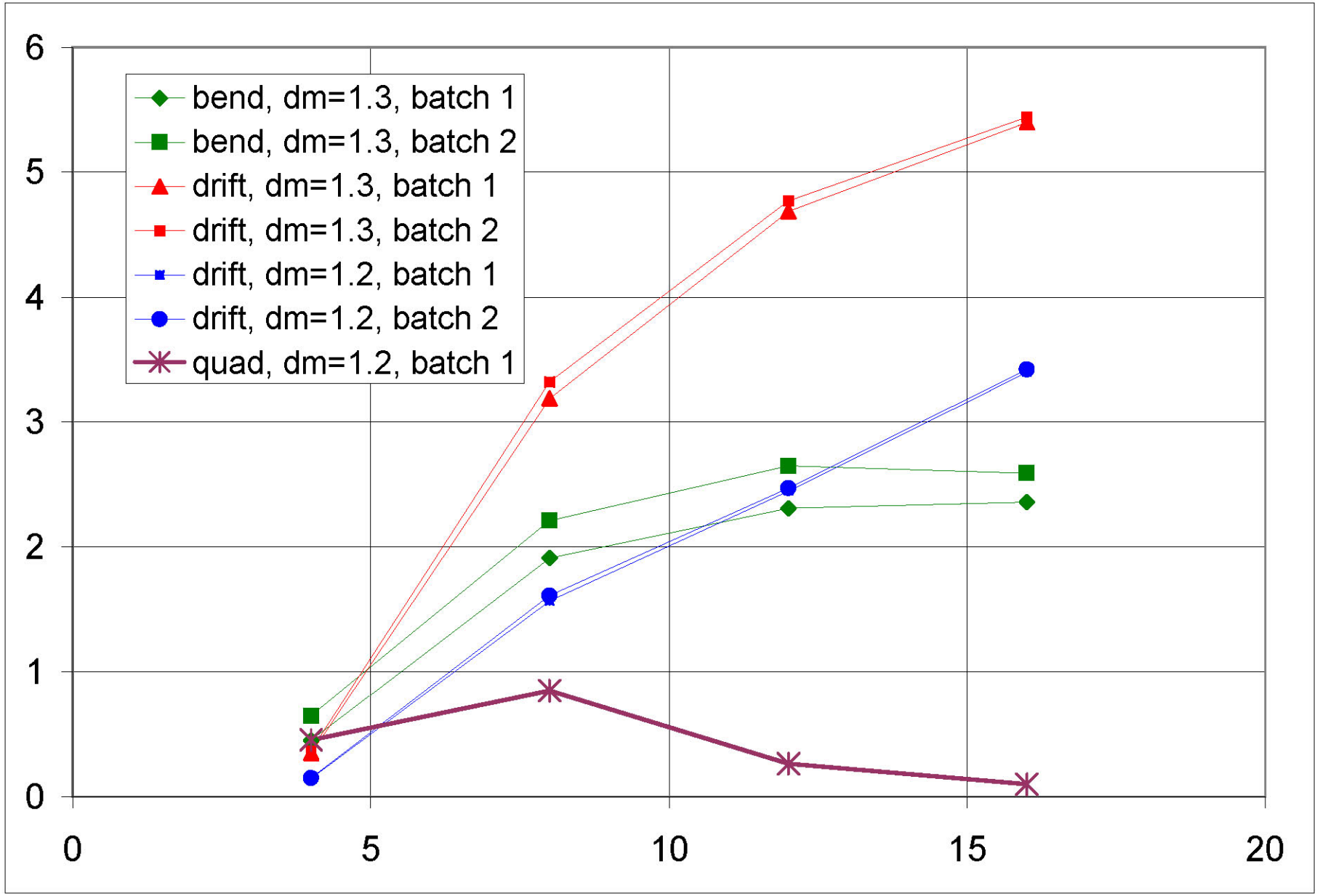


line density

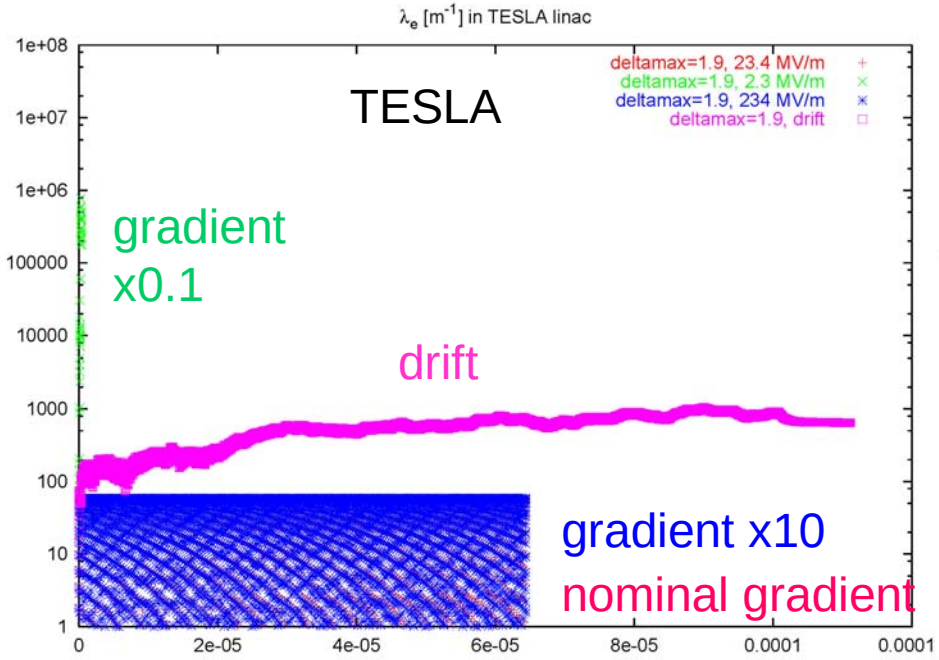
simulation for J.-M. Laurent's detector – decay for different values of reflectivity

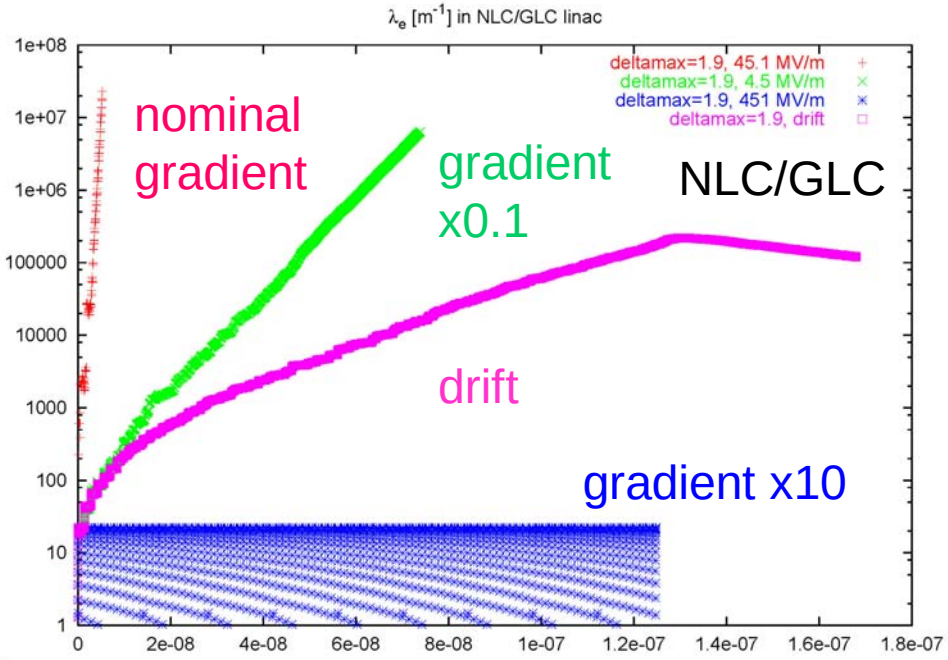


still benchmarking LHC simulations with Daniel – quadrupole added

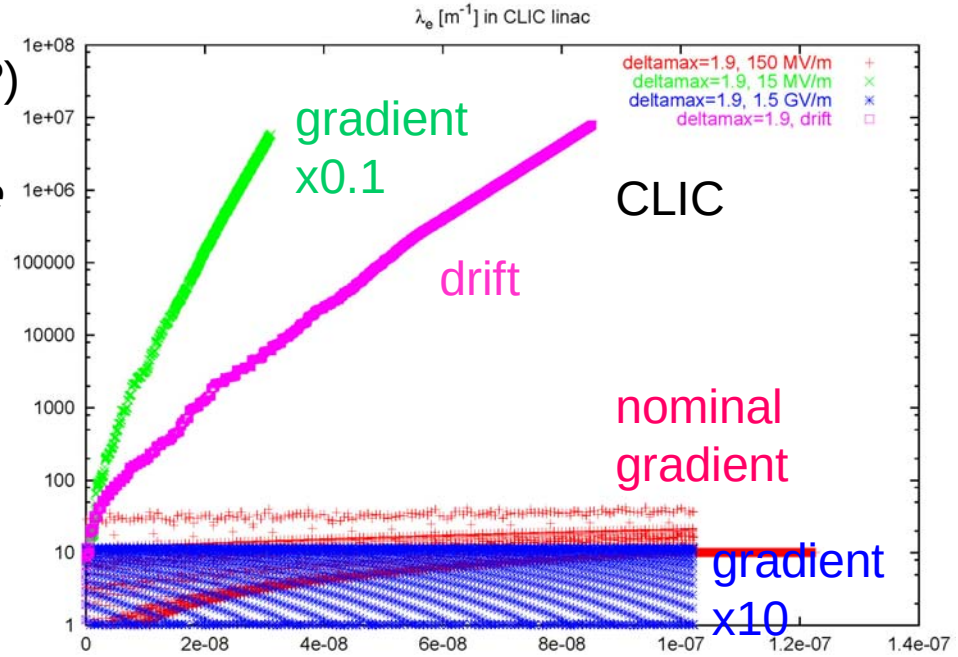


effect of rf field on e- cloud build up in e+ linacs of linear colliders



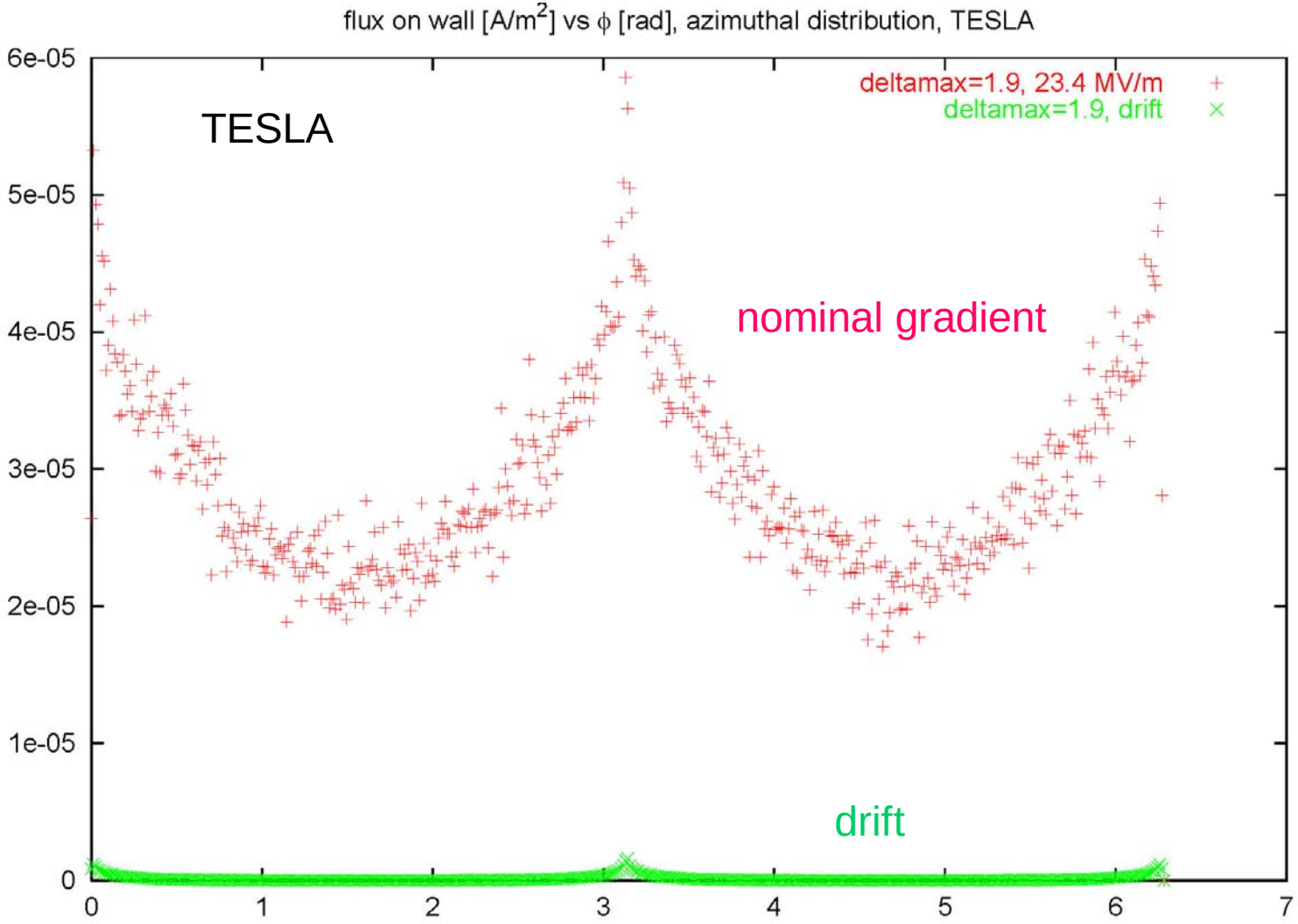


simplified (questionable?) model:
beam field for free space & rf fundamental mode



preliminary result:
intermediate rf fields enhance multipacting;
strong rf fields suppress it

azimuthal distribution of electrons incident on the wall



beam aspect ratio is visible

(note: rf field could accelerate to ~MeV)