Question on Coupler Wake

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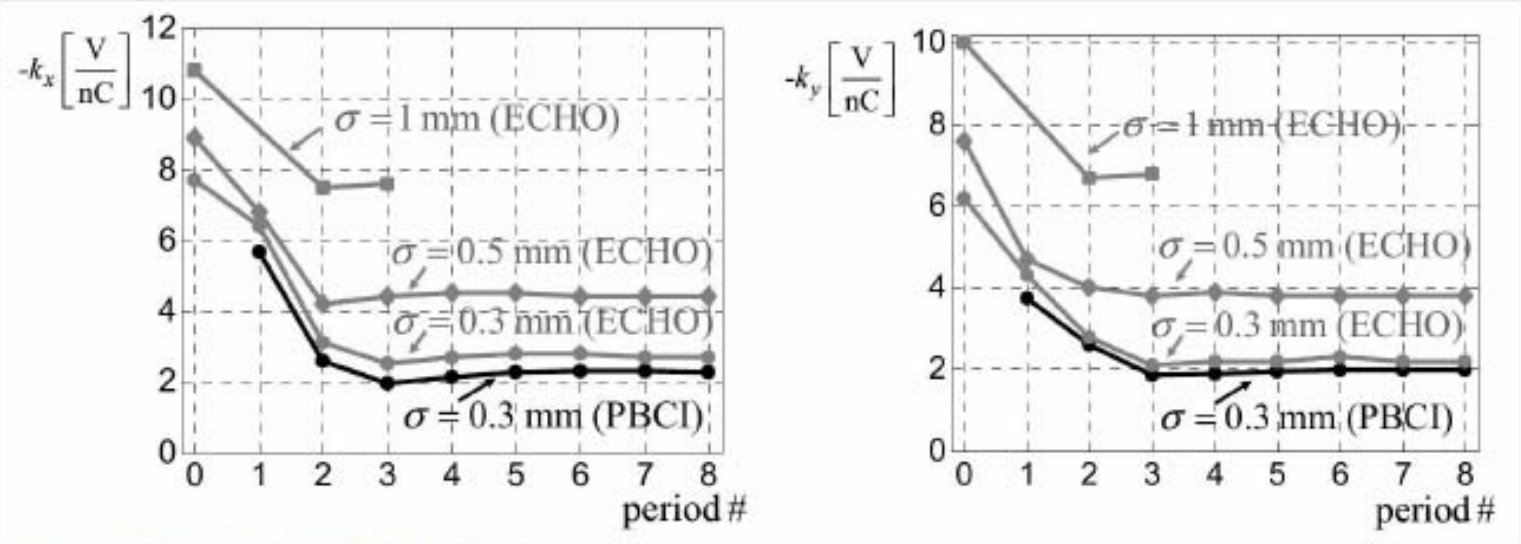
20080916

Wake potential per cavity depends on number of cavities in calculation ?

- Dirk’s slide (phone meeting July 22, 2008)
- Slava’s slide (“Wake Festa” Dec. 2008, SLAC)
  - These two are understood.
- Figure attached to Slava’s message
  - This is difficult. (???)

Size of Transverse Coupler Wakefield in Periodic Structure

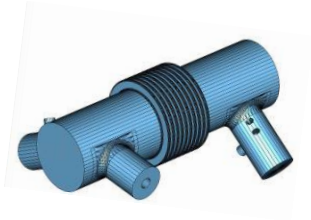


M. Dohlus et al., MOPP013

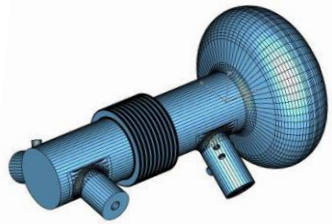
Compared to 21 V/nC , 19 V/nC in my simulations

Significantly smaller now! 1/10

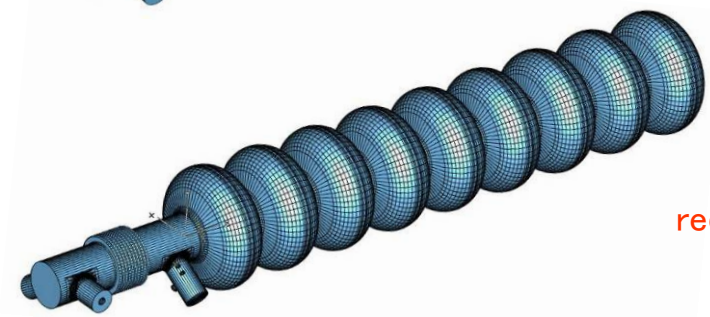
Wake shielding by RF structure



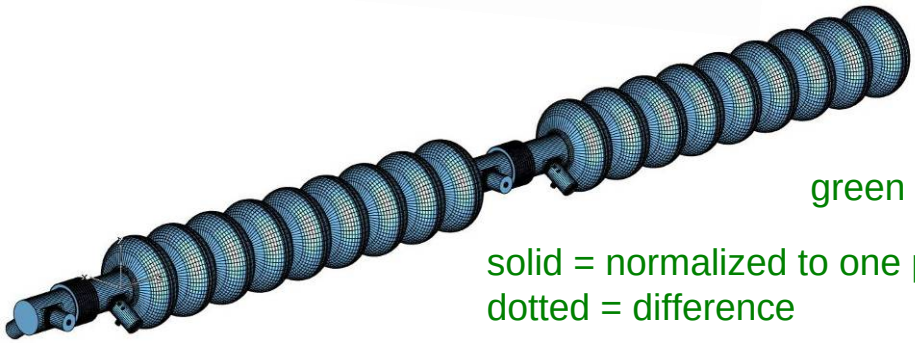
black



blue



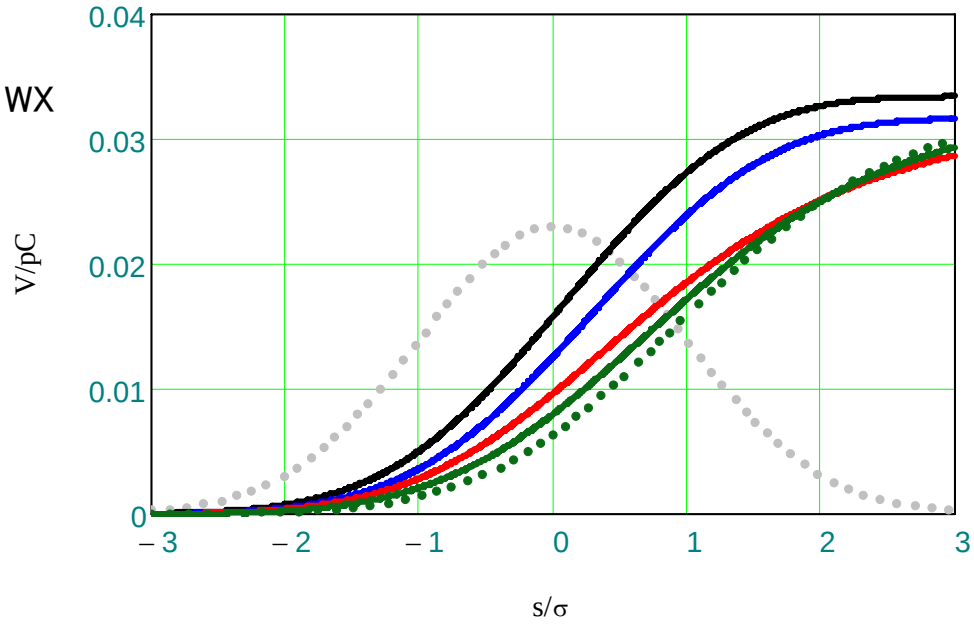
red

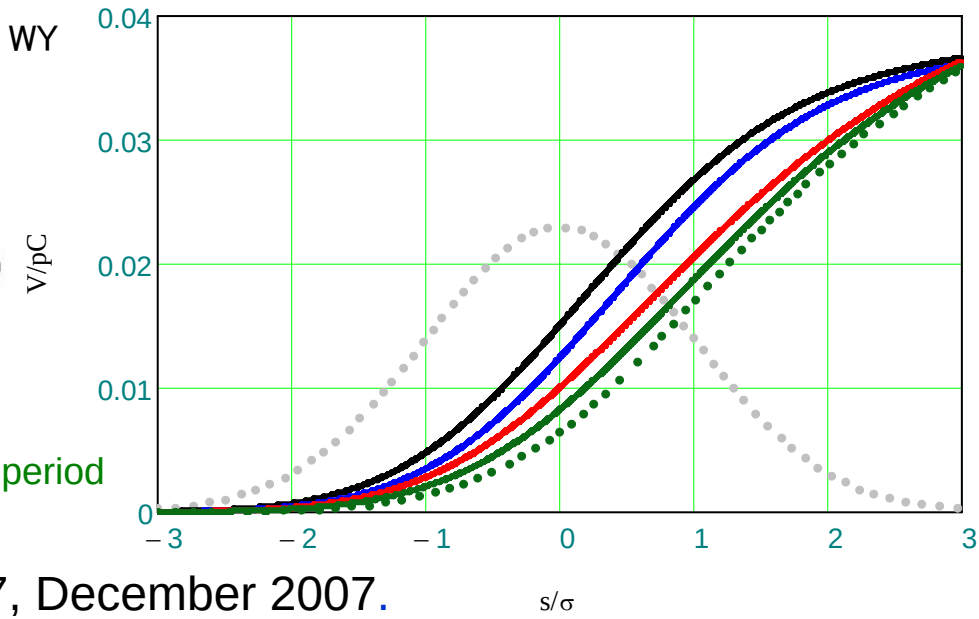


green

σ = 2mm

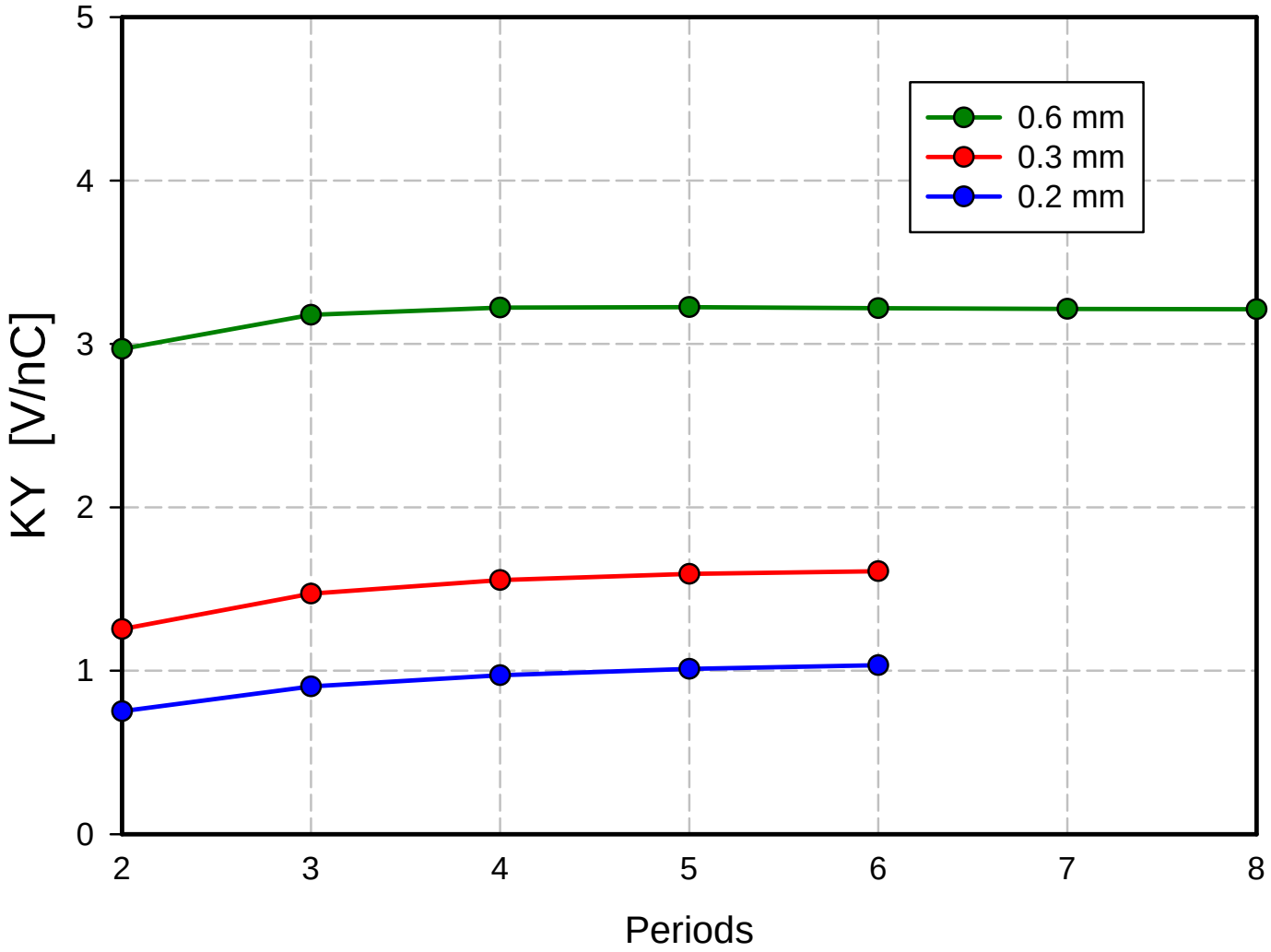
solid = normalized to one period
dotted = difference





V. Yakovlev, et.al, Wake Fest 07, December 2007.

“The kick per period after the different number of periods”



by Vyacheslav Yakovlev (Slava)

“Actual coupler wakepotential for short bunch beam (0.3 mm) is much smaller than that used to be estimated” is the conclusion?

→ Coupler wake will not a problem in main linac.

Correct?

How about in bunch compressors, where the bunch is not so short?