

Crosstalk between beam-beam interaction and lattice nonlinearities in the SuperKEKB

- Updated results

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SuperKEKB optics meeting

Feb. 05, 2013

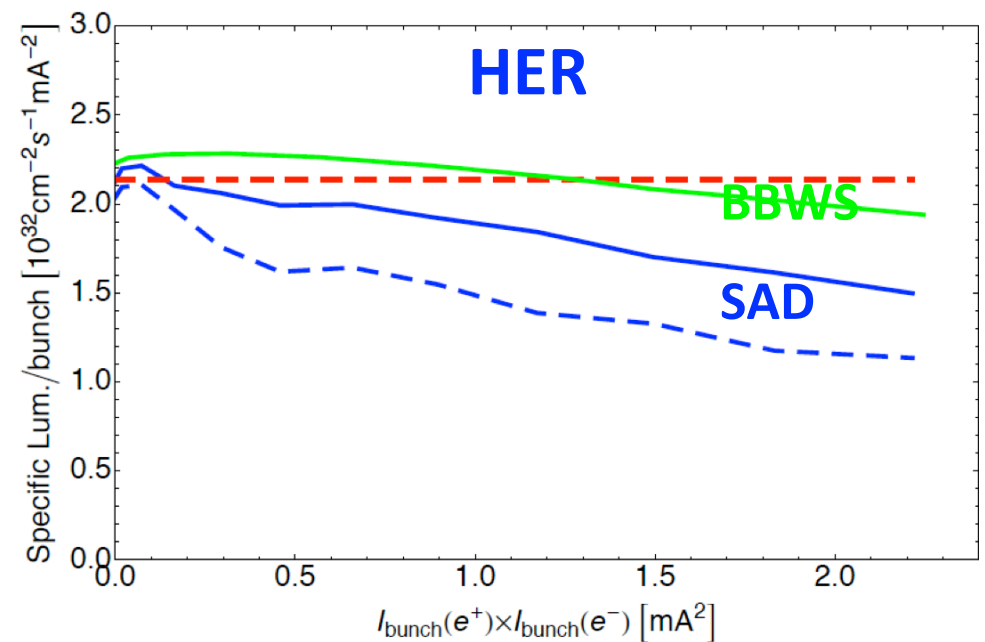
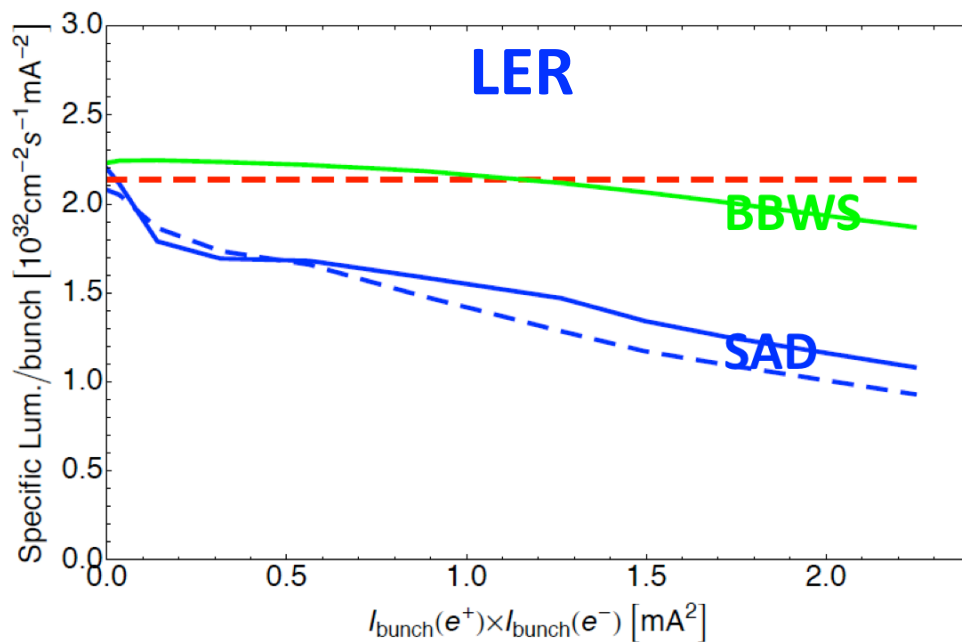
1. Previous results

➤ Previous results:

- D. Zhou et al., SuperKEKB optics meeting, Dec. 21, 2012
- D. Zhou et al., SuperKEKB optics meeting, Jan. 17, 2013

➤ Issues to be investigated:

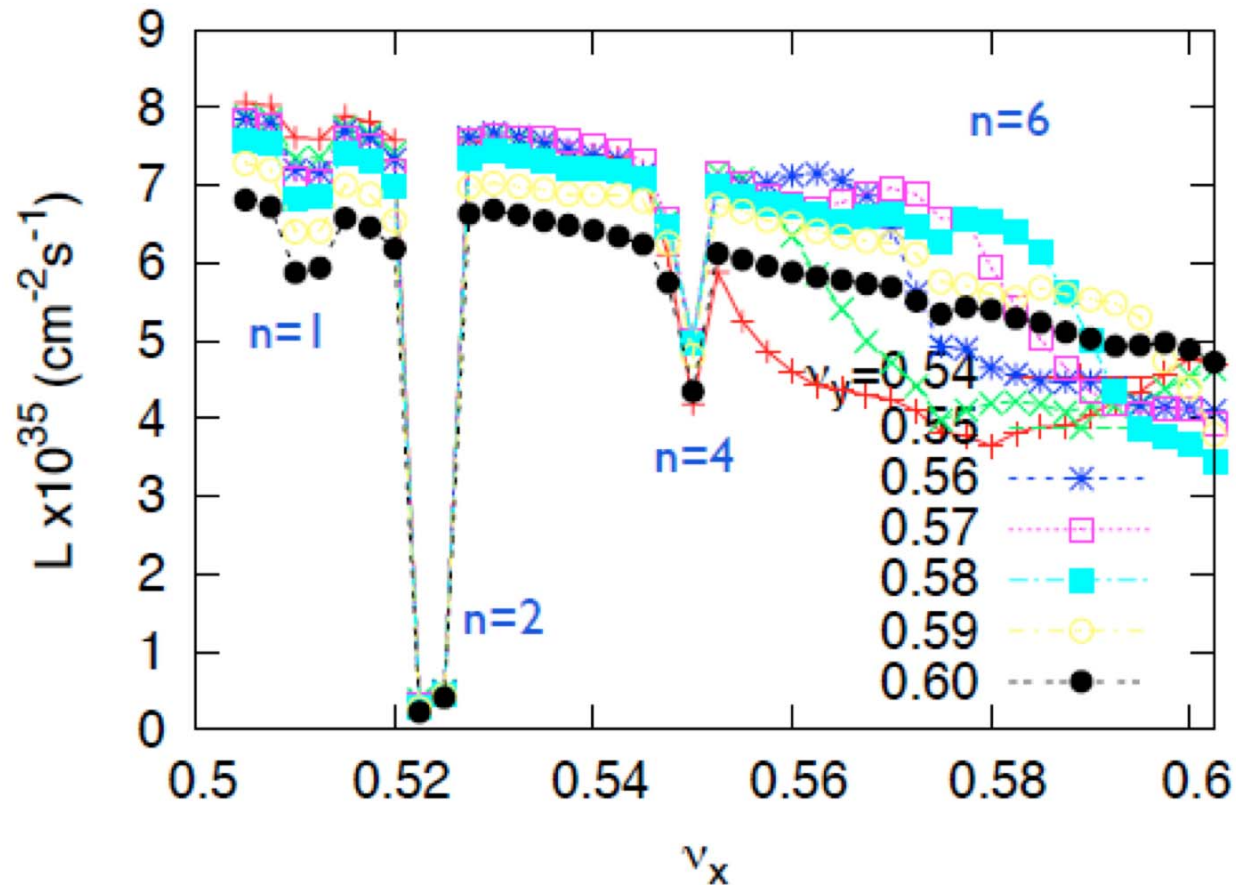
- **Tune scan**
- **Beam tail (Beam size, lifetime, luminosity?)**



2. Tune scan

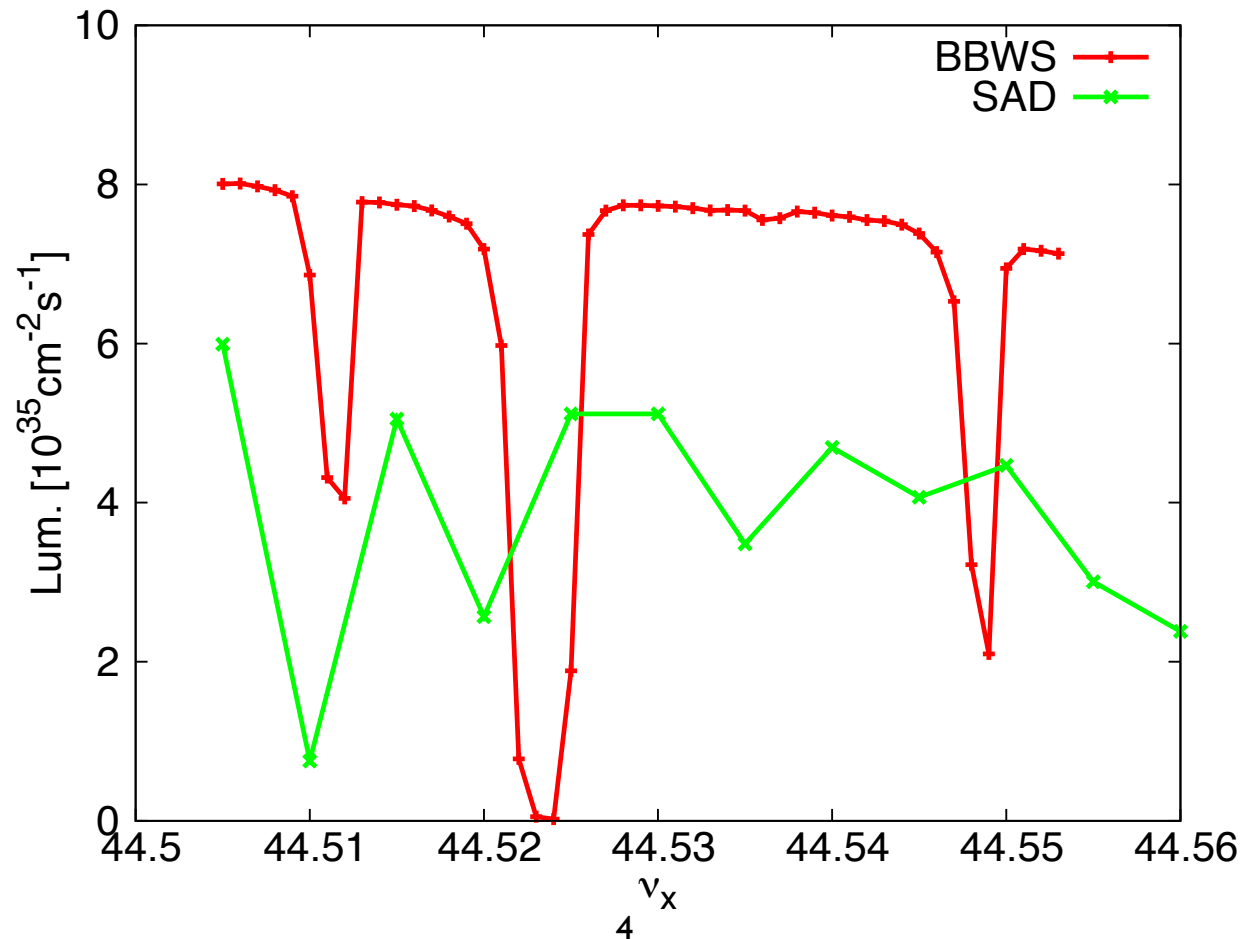
► Ohmi's results:

- Strong synchro-betatron resonances: $2\nu_x - n\nu_s = \text{Integer}$
- Beam-beam force contains x^2z^2 term



2. Tune scan: LER: sler_1682

- Synchro-betatron resonances seen in pure WS simulations
- Tune of (44.53,44.57) is good (?)
- Need more data to observe resonance in SAD simulations
- **Effects of lat. nonlin. not depend on tune?**



2. Tune scan: HER: sher_5753

- Resonance width smaller than LER in pure WS simulations
- Tune of (45.53,43.57) is almost OK (?)
- Need more data to observe resonance in SAD simulations
- **Effects of lat. nonlin. not depend on tune?**

