

Meeting DESY-KEK-CERN on 2025-07-03

Zoom

Present: Takashi Mori, Naoko Iida, Katsunobu Oide, Takuya Kamitani, Ilya Agapov, Andrea Latina, Andrea Aguirre Polo

Discussed items:

Andrea Latina reported on visit to KEK and presentation of the rftrack code.

Andrea Aguirre Polo presented a [summary of studies at KEK and follow-up simulation results](#)

Question of initial beam parameters for the linac simulations was discussed. [Q-scan measurements](#) exist and were later communicated by Iida-san.

Tatsuya Kamitani presented [bunch profile measurements](#) indicating by-modal longitudinal and transverse distributions.

Empirical tuning of BTe emittance was done by bumps through the first linac section, to compensate transverse wake fields. This should be checked in simulations. Transverse orbit is not known precisely, 1mm misalignment magnitude of cavities can be assumed.

Actions:

- Understand 2-peak longitudinal and transverse distributions, by accounting for transverse wake fields in simulations. Compare to measurements shown by Kamitani-san (Andrea A)
- Try to get gun geometry and reproduce simulations until the first chicane (Andrea L, all)
- Next meeting end of July 2025 or whenever new results available
- Next KEK beam studies planned for Oct 20 – Nov 5 2025

Follow-up and additional info:

Email Iida-san 2025 July 4th

Dear Andrea-san,

Thank you for the yesterday's meeting.

- Attached file is about the result of the q-scan by Natsui-san.

- The longitudinal parameters of LER for calculating the ellipse in the phase space are as follows;

Bunch length(σ_z) = 4.7 mm

Energy spread(σ_d) = 7.53×10^{-4}

(For detail,

number of synchrotron oscillation = -0.0247

momentum compaction factor = 3.25×10^{-4}

frequency = 99.3kHz)

These are written on the SuperKEKB HP;

<https://www-superkekb.kek.jp/>

Thank you and best regards,

Naoko