

PITZ Physics Seminar

Zoom meeting 11.05.2022

Participants

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Agenda

AOB:

- FS: DESYans can participate IPAC 2022.
- FS: Conference list:
 - UBA22 is free to join.
 - FEL22:
 - Abstract submission deadline is 20.05.2022
 - more contributions are added; green cathode, laser pulse shaping, and experimental results of 3D ellipsoidal shaping
 - The topic about slice emittance will be presented as a poster without a proceeding paper
- MK: Report from computing board meeting
 - Experts from computing board will give a presentation in PPS.
 - [Rumor] Private usage of DESY computing resources, e.g., e-mail for personal use will be forbidden soon.
 - Overleaf's accounts may be available for DESYans soon

RN: Bunch profile reconstructions with arbitrary y-z correlations

- HQ: Should the correlations be y' and z' ?
 - RN: No, they are y and z
- HQ: Time resolution axis when TDS off should be large. Otherwise, you can't see different projections
 - RN: Disagree, but let's not discuss now
- HQ: S2E simulations should be done first. They will help a lot to understand and analyze the measured data.
 - FS: That the excellent statement
- MK: Page 6, how do you put two profiles together, centering at the center of mass of each profile?
 - RN: still have to look in more detail

HQ: Update on S2E simulations of slice energy spread measurements at PITZ

- HQ: Erion Gjonaj made simulations for EXFEL and PITZ with Intra-beam scattering (IBS)
- HQ (+XL help): S2E simulation of the slit-based experiment with ASTRA and OCELOT
- FS: What do you mean by the central slice?
 - HQ: It's the slice at $t = 0$ (from the reference particle in ASTRA simulations)
- FS: How does the halo part relevant to FEL radiation?
 - HQ: Don't know yet, some Hamburg guys plan to study it but don't hear anything about it yet. However, this topic is not the point here, we try to measure slice emittance, not try to evaluate FEL performance.
 - FS: We should also study effects from cutting the halo part
- HQ: 250pC S2E results are included in the paper, all 500pC results are removed, conclusion is changed
- FS: Could we give hints where can uncorrelated energy spread come from?
 - HQ: Already give a sentence about them in the paper draft.
- FS: Are S2E simulations reliable, maybe you rush to do them?
 - HQ: We already did S2E simulations carefully
- MK: Longitudinal step size in ASTRA could affect modulated beam simulations
 - HQ: That's a good point
- NA: Please explain uncorrelated and correlated energy spread
 - Explained by HQ

HQ: PITZ RC Week 17

- FS: Frank Brinker used 5.5MWg but we use > 6 MWg?
 - HQ: We rely on beam momentum of 6.3 MeV/c and it is consistent with his measured beam momentum.
- FS: We can do fast ramping to avoid vacuum increasing at low power problems
- HQ: Conditioning strategy
 - FS: Should we spent time to conditioning at low power?
 - HQ: Let's try for one day, if it does not help, we give up
 - More detail in the slides
- Programs and shifts in Week 20 are modified.

Protocol written by
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