

Minutes of PITZ Physics Seminar, 12.02.2020

Project: PITZ

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Agenda:

- 1) Talk by G. Georgiev – Simulations of comped beams for THz generation

Results:

- 1) 250 pC and 500 pC were simulated
- 2) Apertures are missing in the simulations
- 3) Integral Power calculation to be checked – perhaps it has to be calculated differently
- 4) Beams from Lyot filter and pulse stacker have different beam energies – 17 MeV/c and 25 MeV/c
- 5) Simulations of ballistic compressions to be done
- 6) Ideal (wanted) distance between two peaks in the bunch profile: 1 ps
- 7) Bigger BSA's (4mm) not possible (according to Prach), as these beams cannot be focused to a small spot with off-crest acceleration. But with small charge it has to be checked in simulations
- 8) Peak currents are very low: 7 Amps and ~ 30 Amps -> Prach simulated ~150 A for lasing in the undulator for SASE
- 9) Houjun: Do End-to-Start simulations: Find which bunch shapes you need (in genesis) to find the parameter range (e.g. emittance, peak current), then do ASTRA simulations to generate the beam – now we're guessing

Next steps:

What is to be done ?	By whom ?	Until when?	Done on
Calculate spectral power density around peak in spectrum	G. Georgiev		
Check integral power calculation	G. Georgiev		
Do simulations with bigger BSA's (to relax space charge forces in LEDA)	G. Georgiev		
Check, which peak currents the seeded beam needs for saturation in the undulator	G. Georgiev		

Protocol prepared by

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