Minutes of PITZ Physics Seminar, 14.01.2022

Project: PITZ
Participants: M. Krasilnikov, A. Lueangaramwong, R. Niemczyk, G. Vashchenko, X.-K. Li, A. Oppelt, N. Aftab, F. Riemer, A. Hoffmann, F. Stephan, G. Georgiev

Agenda:
1) AOB
2) Talk by G. Georgiev: Update on seeded FEL simulations with Genesis 4
3) Talk by G. Vashchenko: Presentation of the new LILI interface

Results:
1) AOB
   a. FS: Things which can be done from home: DO from home. If work requires you to come to DESY, come to DESY
2) G. Vashchenko's talk:
   a. What is a latched Gun IL: GV: Latched Gun IL does not stop operation, but turns off FF; 'real' IL stops operation
   b. FS: Are the contents the same? GV: Yes, they are the same.
   c. FS: Will the two plots show up on top of each other? GV: Will be implemented.
   d. FS: Will the auto scale Y button work? GV: Yes, they scale y to the maximum value + 10% (globally), and then use it on all the vertical axis
   e. MK: Can we get the first IL pulse in red, with double line thickness? GV: I'll have to see how it is best. FS: The last 'healthy' pulse should be very prominent, as this is the one we will compare to.
   f. MK: Thanks, that tool will be an improvement.
   g. FS: There should be a note, that the tool doesn't work under Windows. GV: There is a note that it does not work when it's attempted to start under windows.
3) G. Georgiev's talk:
   a. MK: What is the meaning of the harmonic slicing parameter? GG: I am not sure myself – in Genesis the beam is sliced. I think for the calculation of the harmonics the beam is sliced in shorter slices, depending on this parameter.
   b. MK: You starting level of the bunching factor is 1E-6, but what is the shot noise level? GG: It is very close to the shot noise level, as you can see on p. 13. 1E-6 is shot-noise-dominated.
   c. X. Li: Question on over-bunching. Check with longitudinal space charge forces. They will slow down the bunching, as the slices are very thin, and the space charge forces is very high.
   d. X. Li: Shot noise is on 1E-9 level in experiment.
   e. MK: What is the bunching factor? GG: This I don't have, only the spectra, i.e. the Fourier-transform

f. X. Li: G. mentioned the Fourier transform and bunching factor – in Genesis they are the same.

Protocol prepared by
Raffael Niemczyk, 14.01.2022
(Name, Date)