

# Minutes of RESULTS, PITZ Physics Seminar, 14.11.2013

Project: PITZ

Participants: Mikhail Krasilnikov, Georgios Kourkafas, Dmitriy Malyutin, Marek Otevre, Grigorii Vashchenko, Prach Boonpornprasert, B. Marchetti, A. Oppelt, G. Pathak, M. Khojoyan, J. Good, M. Gross, D. Kalantaryan, m. Nozdrin, I. Isaev.

## Agenda:

- 1) G. Pathak: Preliminary results of on self-modulation of PITZ electron beam from HiPACE simulations.
- 2) M. Khojoyan: Booster position optimization for flat-top and 3D ellipsoidal laser profile.
- 3) F.Stephan: MAC meeting report + annual meetings conclusions, 1<sup>st</sup> part.

## Results:

- 1) G. Pathak: Preliminary results...
  - Code works, just preliminary results, no care was taken to input params.
  - Next steps:
    - Match the setup (plasma density, beam density, plasma depth considered...) with the Alberto's case (OSIRIS) to be able to compare the results.
    - Introduce energy chirp
- 2) M. Khojoyan: Booster position optimization ...
  - Optimized: booster position and gradient, laser spot size, but fixed EMSY position.
  - More sensitive wrt. spot size for the 3DO, because the optimum is at higher charge density.
  - Optimized booster position 2.9m for the Flattop, and 2.7m for the 3DO
  - The booster position "candidates" are 2.7m or 2.8m from the cathodes
- 3) ...
  -

## Next steps:

What is to be done?	By whom?	Until when?	Done on
Find out: Is the energy chirp of the input beam taken into account in HiPACE; and how?	G. Pathak		
Find out: Can be output from HiPACE converted to ASTRA input?	G. Pathak		

Clarify where the “positron” may come out (plasma or input or “all particles in the system”)	G. Pathak		
Clarify if it is possible also to exit the plasma with the bunch. (by increasing and decreasing plasma density)	G. Pathak		
Clarify with Alberto about initial conditions (“entering and exiting plasma” or “all the time in the plasma”)	G. Pathak		
Comparison of tolerances btw FT and 3DO for 2.7m and 2.8m, focus on the 2.7m, optimize the EMSY position	M. Khojyan		
Comparison of sensitivities on the spot size for different charges (relative and absolute)	G. Vashchenko		
Clarify: Do you need more space for the plasma staff?	M.Gross &co.		
Estimate the effort needed for the booster movement	A. Oppelt + Mech.		
Teaching of new-comers issue -> think about how it can be done.	PITZ		

Protocol prepared by M. Otevre  
14.11.2013