

# Minutes of RESULTS, PITZ Physics Seminar, 7.7.2016

Project: PITZ

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## Agenda:

- 1) G.Loisch: Gas discharge plasma cell performance @ PITZ.
- 2) Topics of Summer Students
- 3) Beam satellites found at PITZ in July 2016
- 4) General announcement

### 1) Gas discharge plasma cell performance @ PITZ.

- The first measurement is done.
- If the high pressure more than 2 mbar solved by floating window flange (isolated)
  - Measure electron density by stacking broadens of spectral lines method  $\sim 2.2E16/cm^3$  (10 shots).
  - Stability along the cell is non-homogenous (preliminary measurement).
  - Before publication: measure the electron temperature, other pressure, define experimental error. i.e measure line shift.
  - The advantage of the gas discharge cell: simple set up, electron window at plasma, no lithium, cell is compact, Online measurement is possible.
  - Make sure that electronics devices operate at 10HZ for installation.

### 2) Topics of Summer Students (Mid July)

- G.Loisch: implementation of realistic longitudinal plasma profiles into simulations
- H.Huck: Solenoid Focusing (experiment and simulation)
- M.Krasilikov: LEDA scan fit for MMMG (mean momentum of e beam as a function of gun launch phase, implement the theory into OMA)
- I.Isaev: Acoustic wave simulation in copper waveguides, LILI DAQ fix and upgrade, Investigation on the difference in beam focusing in CST and ASTRA, RF Spectra fit to Lorenz curve, Multipacting Simulations of rectangular waveguides of the gun
- There are 2 students for 8 weeks

### 3) Beam satellites found at PITZ in July 2016

- Stable beam energy modulation observed in LEDA
- Asymmetric beam study with normal and invert polarity in LOW.Scr shows two spots (satellites) at center of the beam when booster is off.
- Found 2 satellites with 51 degree difference in LEDA.
- Hypothesis: alignment of optical instrument?
- Open BSA camera on Thursday next week.

#### **4) Plasma Dummy Stress Test4**

- Used for stress test: 25 bunches with 1 nC.

#### **4) General announcement.**

- Accident about window RF leaked at FLASH
- AFS will be cancelled soon.
- Zeuthen Open Day on 11<sup>st</sup> of September, all staffs should be here.
- Work shop about THZ on 3<sup>rd</sup> October in Switzerland.

**Next steps:**

<b>What is to be done ?</b>	<b>By whom ?</b>	<b>Until when?</b>	<b>Done on</b>
Installation of new plasma cell (ceramic)	G.Loisch		

Protocol prepared by:  
C.Saisa-ard, 7.7.2016  
(Name, Date)