

Minutes of RESULTS, PITZ Physics Seminar, 15.09.2016

Project: PITZ

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1) Agenda:

- a. Y. Chen. Field Emission in the PITZ RF gun for Astrophysical Application
- b. Run Coordination

2) Results:

- a. Field Emission in the PITZ RF gun for Astrophysical Application
 - Requirement for continue beam, high current (mA), relativistic beam , plasma density 10^{13} cm^3 , long plasma, $\sim 80 \text{ ps}$ bunch length.
 - CW laser 0.1mJ for Mercury lamp (power is to be calculated) for photo emission (PE)
 - Field Emission (FE) based on RF gun field gradient about $\sim 45\text{-}80 \text{ MV/m}$
 - Field Emitter: diamond thin film and FE analytic described by Fowler-Nordheim equation
 - FE by single trip design can be simulated with gradient 4.7-5 GV/m by CST-MWS and then do Astra simulation. The continuous beam is provided.
 - Next: contact Astrophysics group
 - Next step: gated FE can be done in RF gun?
- b. RC
 - Flat-top procedure still is ongoing.
 - The beam is measured on HEDA2 and the head beam is on the bottom on the Disp3.Scr. (up to TDS phase)
 - Sunday Plan: Check flat-top with 1nC (1.2 mm BSA) and do normal emittance measurement procedure.
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What is to be done?	By whom?	Until when?	Done on

Protocol prepared by:
Name, 15.09.2016