9mA webex meeting on 17th July Notes (1)

General Updates

- **John: 9mA studies are confirmed for KW38 (week of Sept 17) but actual dates not yet fixed. Julien: FYI, there is a big event at DESY on Sept 19th**
- **Valeri: new gun has been working well so far**
- **Christian: will be doing studies with uTCA LLRF test system weekend. Electronics racks are located in the FLASH tunnel to mimic radiation environment they will see at XFEL**
- **New quench server has been implemented that should be more robust against false trips than in Feb**
- **John: please consider whether there are specific studies that we'd want to do for inclusion in the planned 9mA Journal article**

Notes (2)

Klystron saturation studies

- **Shin: increasing beam current would be the desired option for increasing klystron power during flat-top. Also needed for gradient operation study with beam loading. We need an update from Siggi on gun/transport**
- **Valeri: it could be quite difficult to increase beam current due to transport issues (even if gun delivers the charge). Experience from Feb shows this**
- **Valeri: yes, it would be possible to lengthen the fill time to >700us to reduce fill power (we used 660us in Feb) while maintaining flat-top power**
- **Brian: we should measure transfer function LLRF drive to klystron o/p**
- **Brian: is drive amplifier saturation a problem? In Feb, we avoided this situation by reducing the attenuation in the klystron drive chain**
- **Christian: observed drift in stability during Feb saturation study (Shin's slide) – was this due to some automation scripts? Christian will check daq data (needs timestamps for daq)**
- **Other options for having higher relative klystron power during flat-top than during fill time?**

Notes (2)

- **John: could we do the study on ACC45 instead of ACC67 and then increase the average loaded Qs? (gradient spread is lower)**
- **Julien: ACC45 has stub tuners not motorized couplers, so much more difficult to change the Qls**
- **John: could we increase the flat-top power by running all the cavities off resonance during the flat-top?**

Other items

- **Julien: during Sept study, we should measure the increased rf power required to flattening the gradients with Pk/Ql control**
- **Shin: propose to study what happens operationally if we dynamically lose a piezo on a single cavity and hence lose LFD compensation**

For next meeting (31 July)

- **Gustavo will show results of additional analysis from Feb saturation study**
- **Julien will look at the proposal to use detuning to increase flat-top power**