Minutes of PITZ Physics Seminar, 18.02.2022

Project: PITZ
Participants: R. Niemczyk, X.-K. Li, N. Aftab, A. Hoffmann, F. Stephan, M. Gross, T. Weilbach, C. Richard, G. Vashchenko, F. Riemer, G. Adhikari, M. Krasilnikov, A. Lueangaramwong, Z. Aboulbanie, T. Weilbach, H. Qian

Agenda:

1) AOB
2) Presentation by G. Vashchenko: Seismometer tool
3) Presentation by C. Richard: EMSY Noise Filtering Methods

Results:

1) AOB
    a. HQ: News from the vacuum leak tests? TW: Unfortunately, not, there was
    b. FS: Appraisal interview will start soon
    c. FS: I can report from last year's appraisal interviews
    d. Invitation to FEL conference was sent around
    e. FS: We should discuss the progress on the cold guns
    f. FS: Any updates from Zakaria on radiation biology? ZA: I didn't get any updates from Zohrab
    g. MK: Everyone is welcome to present their research in PPS, please sent us an email in advance
2) GV
    a. FS: Where do I see the time stamps in the spectra? It is integrated over the time.
    b. MK: I see the signatures form the constructions side in the vibration spectra
    c. GV: Sometimes there are red lines: This indicates saturation of the ADC, i.e. the vibration amplitude is very large.
    d. FS: Why are the times getting lower to the right side? This is UTC and CET.
    e. AO: The construction side will move closer to the PITZ tunnel soon, so we might see more then
    f. FS: Can we print the data into the PITZ e-logbook? GV: Yes, we can do it every now and then automatically
3) CR
    a. MK: I is the pixel intensity? Yes
    b. FS: What is USV? And SVs are something else? CR: Yes
    c. FS: Physical interpretation of the nth eigen images. CR: Not sure if there is a physical meaning
    d. FS: What is a butterworth filter: It is very broad for a certain region, then it drops with different slope (depending on a filter parameter)
    e. FS: Would you use different filter settings for different beamlet images? CR: Yes, there would be different analysis for different images, which would be determined by the images by themselves.

    f. NA: We also have X-ray noise. Will it be effectively removed? CR: It will have a high frequency, so a Fourier filter will remove it effectively.
    g. HQ: We have to not only consider the projected emittance, but also the average beam brightness, see my paper
    h. RN: Which language did you program in? CR: MATLAB
4) TW: Shifts and shutdown
    a. Help in tunnel will be needed, an email will be sent around when human power is required a day before.
    b. If conditioning is finished, measurements could start two weeks after. Shutdown in week 16, i.e. the week after eastern
5) MK – discussions on conditioning
    a. FSL Vacuum gets better if there are more reflection, i.e. vacuum activity is not related to high fields at windows, but at the cavity.
    b. FS: Most SoMARIL events happen at the beginning of the rf pulse (mostly), independent of the rf flattop pulse length
    c. FS: I think the issues are more likely coming from the gun than from the windows.
    d. MK: We might change the phase shifter by 3 degree in order to improve the conditioning results: FS: I would not do this, we only have three days and are not sure what we really do there it seems…
    e. FS: Gun shows some coughing over the rf pulse in the reflected power. There is something going on in the cavity, perhaps it is okay or desirable to achieve conditioning success.
    f. FS: We need fast recovery quickly, it helps us a lot, but now it is not working…
    g. FS: Highest power was reached by Prach when SoMaRIL was in debug mode (only observing, not interrupting operation). Perhaps it should be off to get faster conditioning results
    h. MK: Vacuum looks fine now, but we can still fire TDS next week in the shutdown

Protocol prepared by
Raffael Niemczyk, 18.02.2022
(Name, Date)