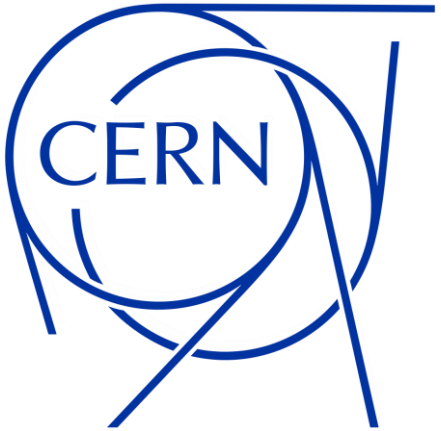


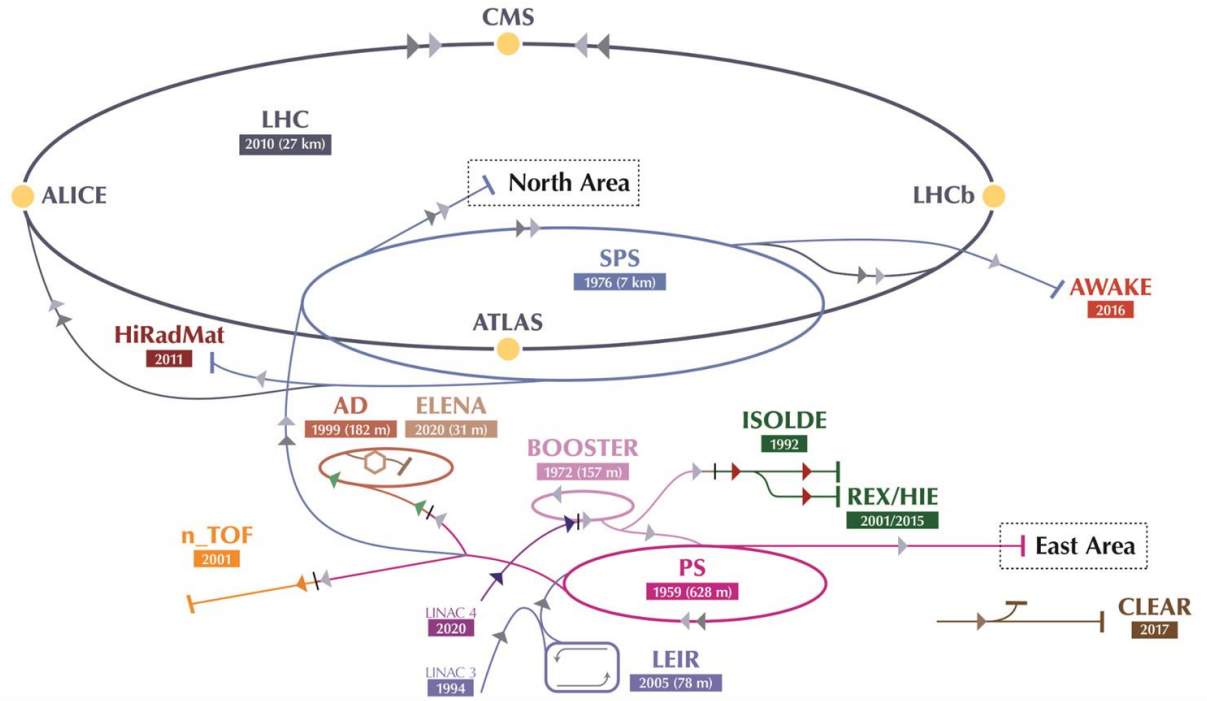
Processing and Analysis of HiRadMat Beam Line Data

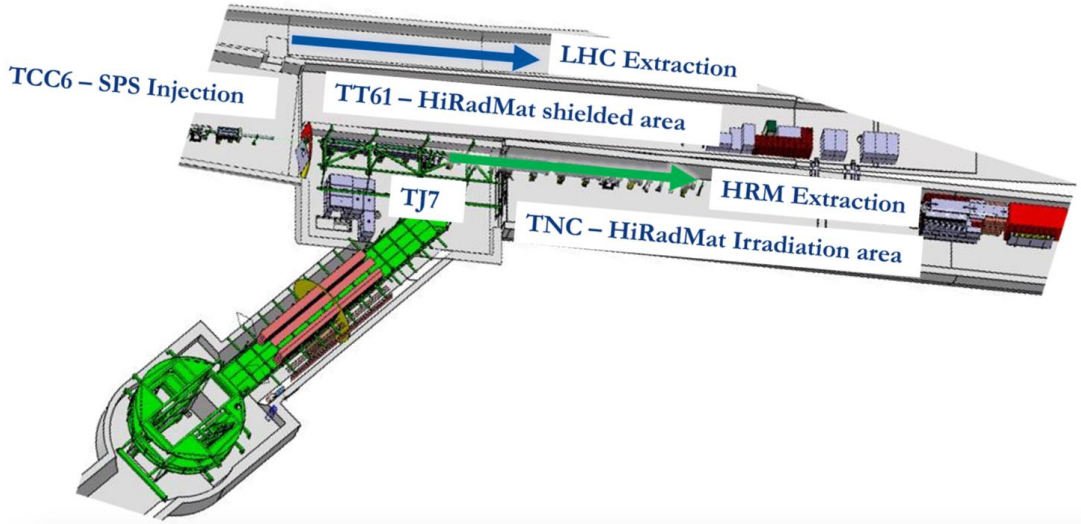
Julia White

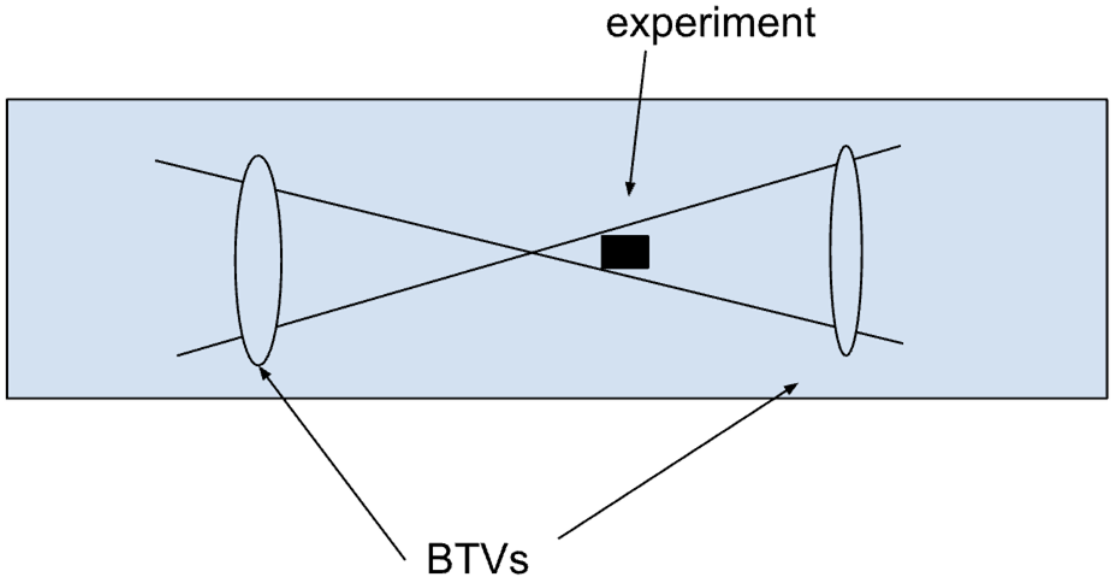
7/25/2024

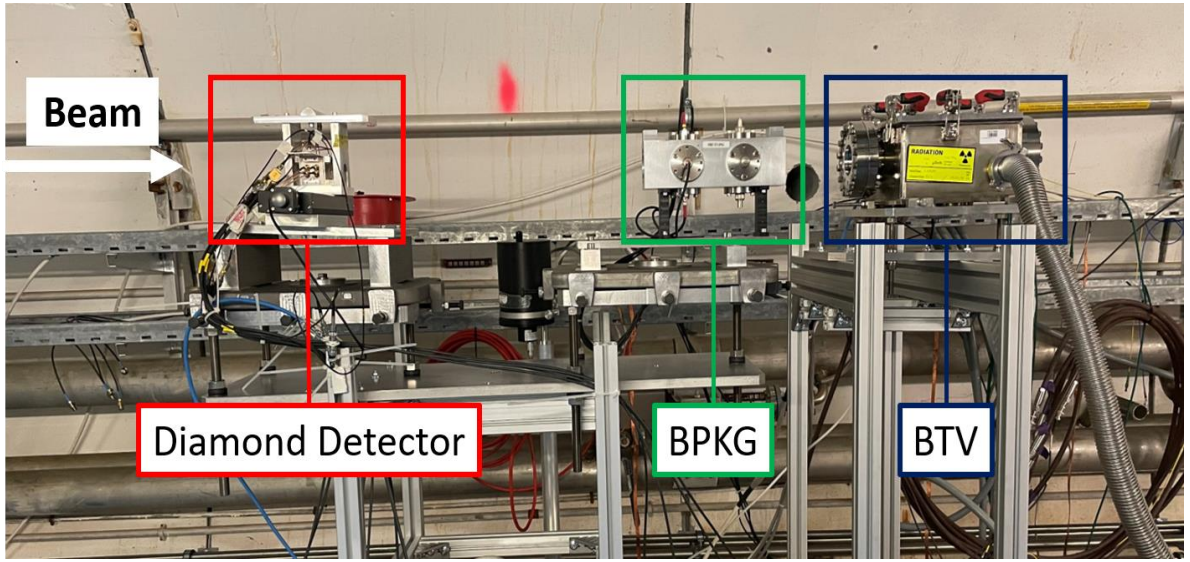
HiRadMat

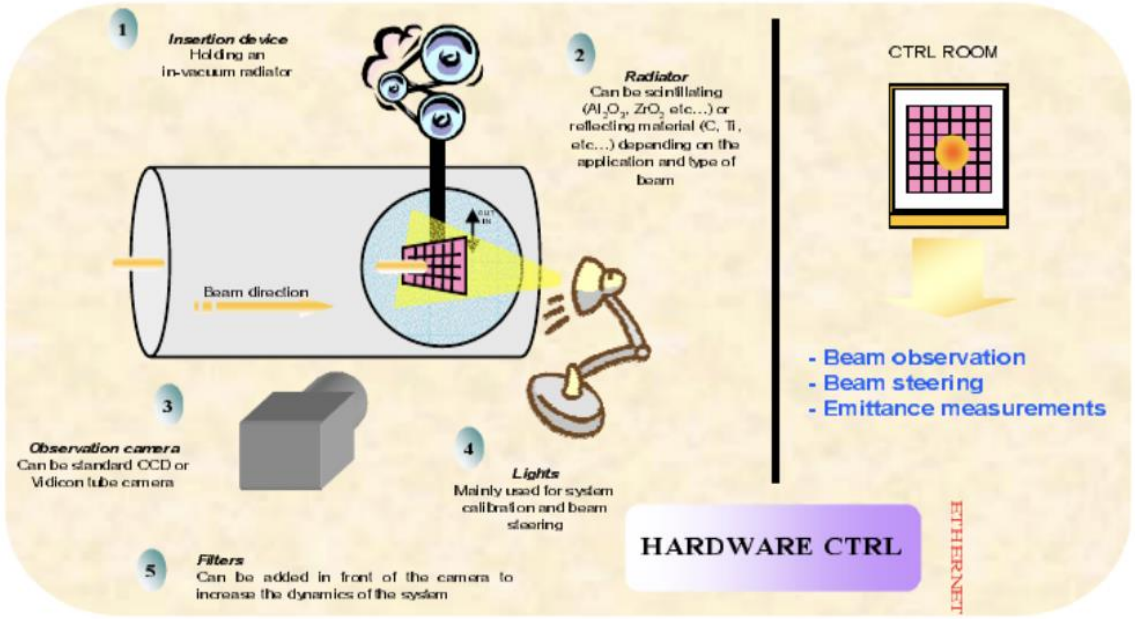
- High Intensity Radiation to Materials
- Test the effects of short beam pulses on materials and accelerator components



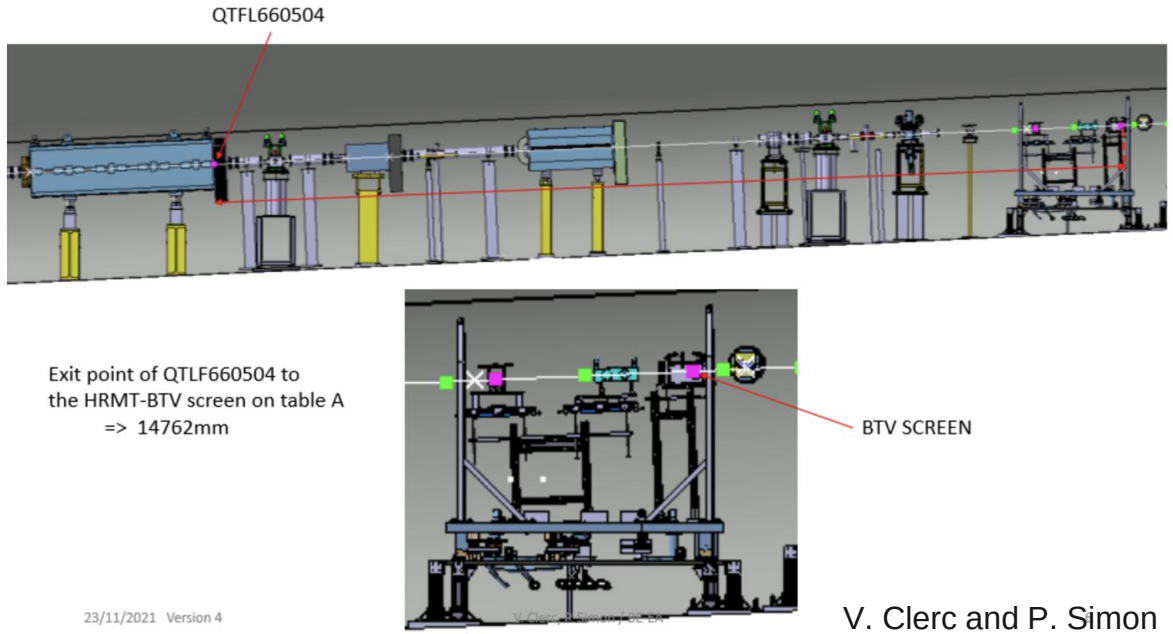






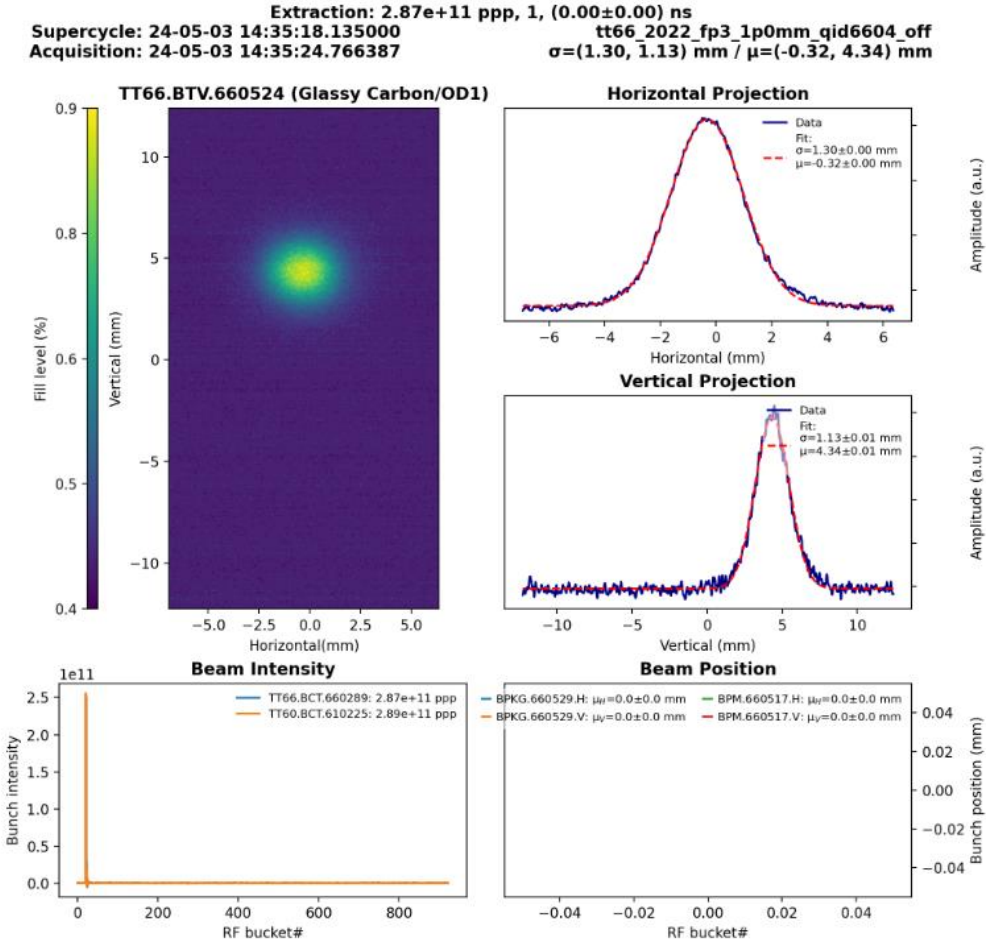


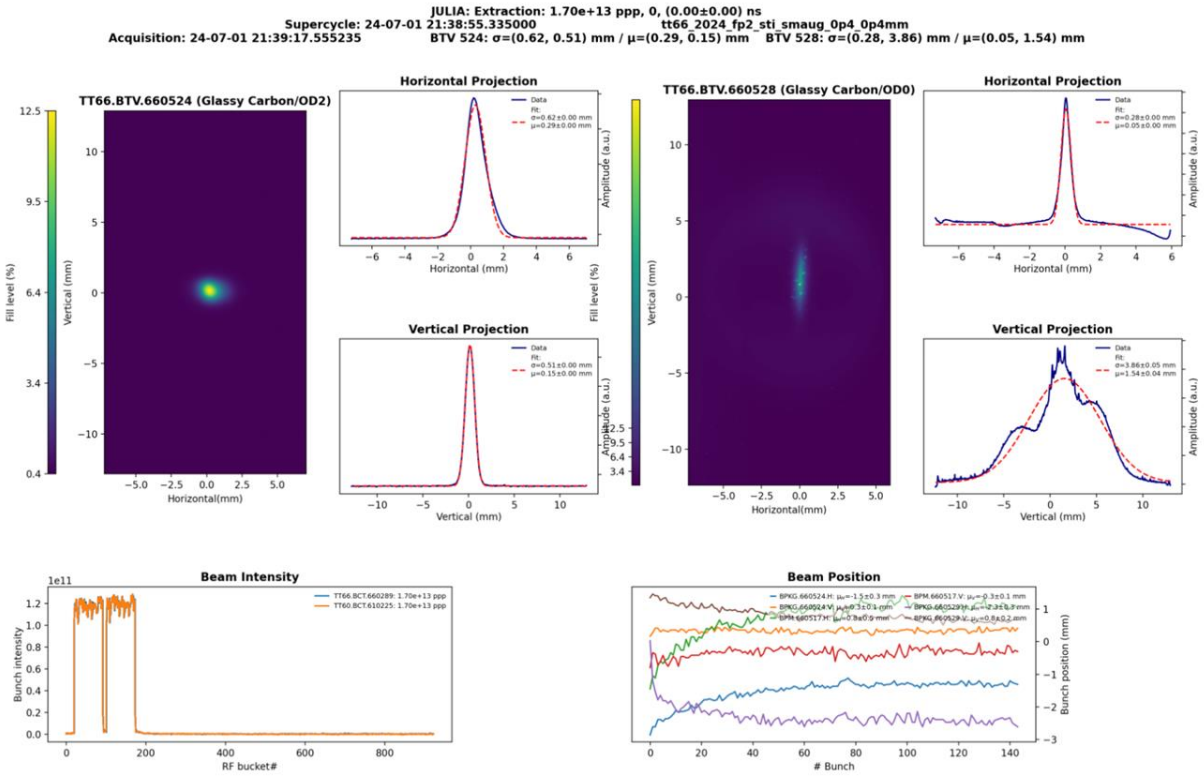
S. Berger



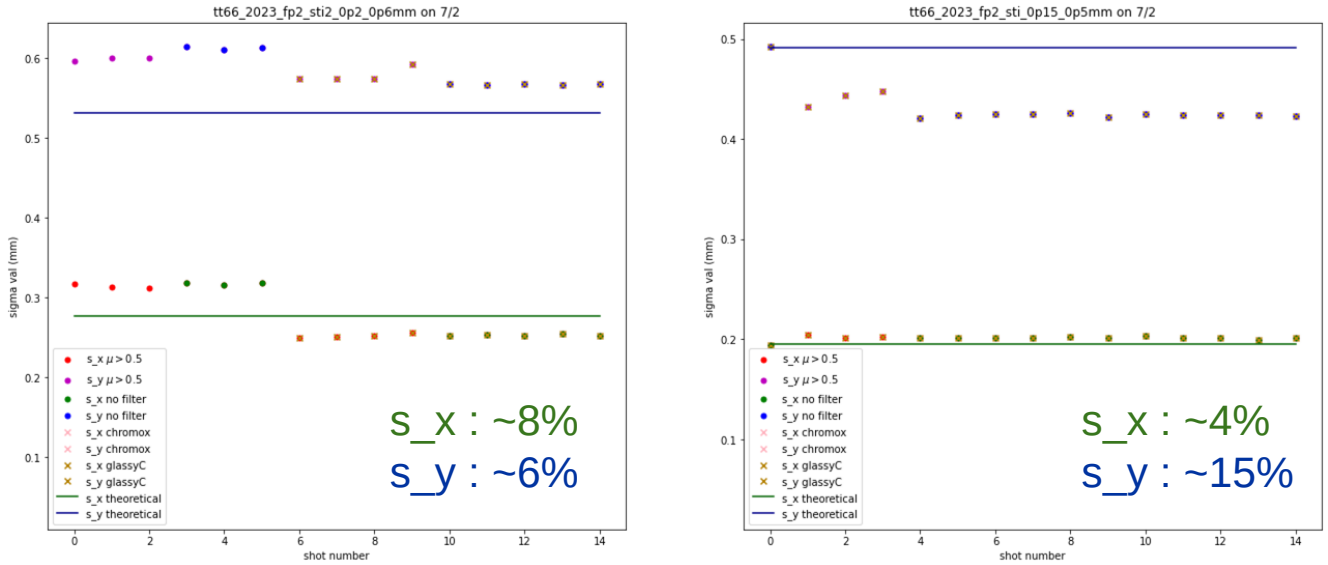
V. Clerc and P. Simon

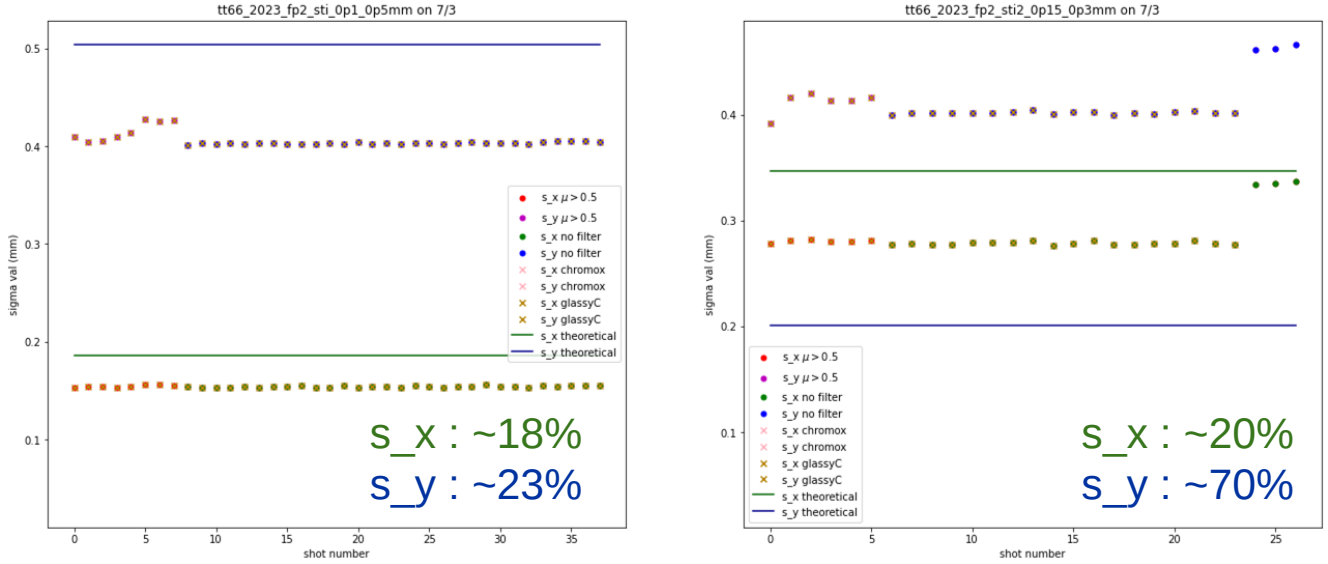
Real-Time BTV Script

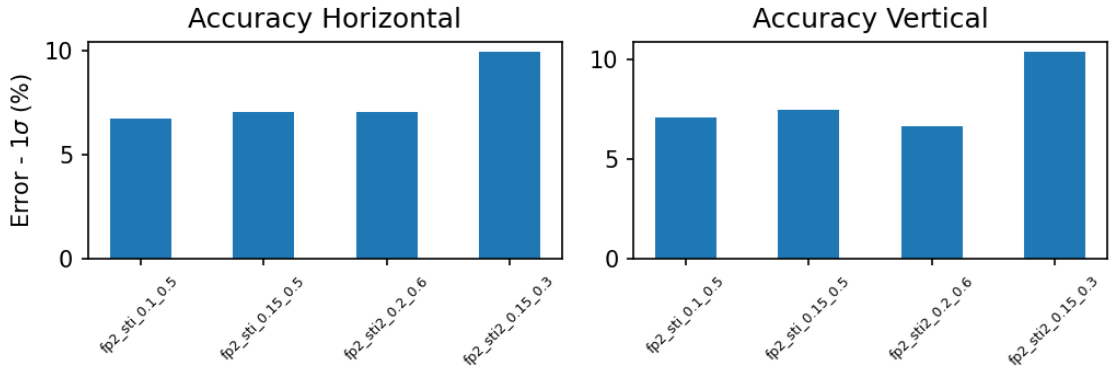




Results From July 2 and 3



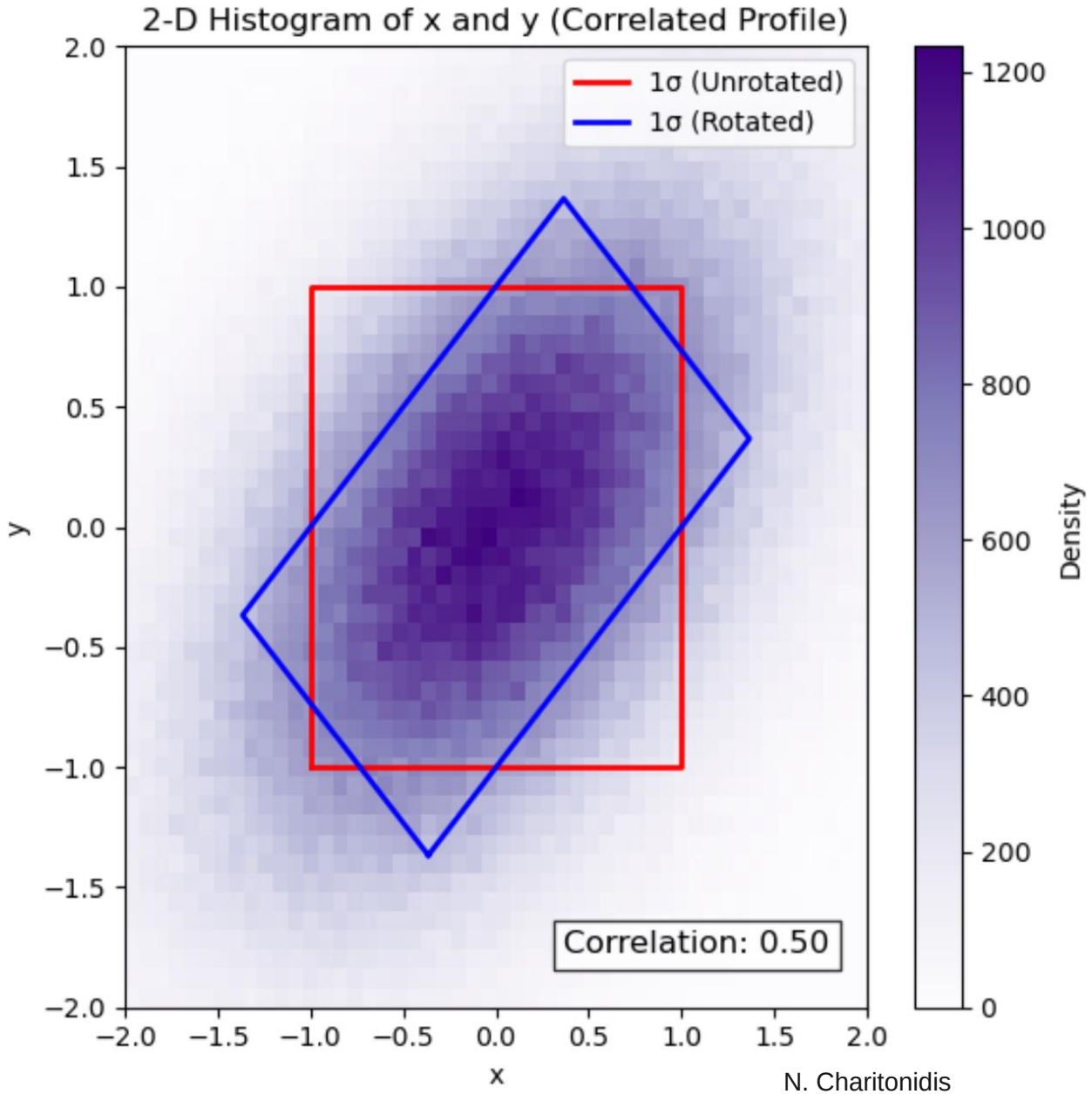




F. Velotti

	at target		theoretical at US BTV		measured at US BTV		
	optic x [mm]	optic y [mm]	sigma_x	sigma_y	BTV660524.fit.sx	BTV660524.fit.sy	sim
tt66_2023_fp2_sti2_0p2_0p6mm	0.2	0.6	0.311	0.574	0.32	0.60	
tt66_2023_fp2_sti_0p15_0p5mm	0.15	0.5	0.196	0.491	0.21	0.43	
tt66_2023_fp2_sti_0p1_0p5mm	0.1	0.5	0.18600	0.50400	0.15	0.41	
tt66_2023_fp2_sti2_0p15_0p3mm	0.15	0.3	0.34700	0.20100	0.28	0.39	

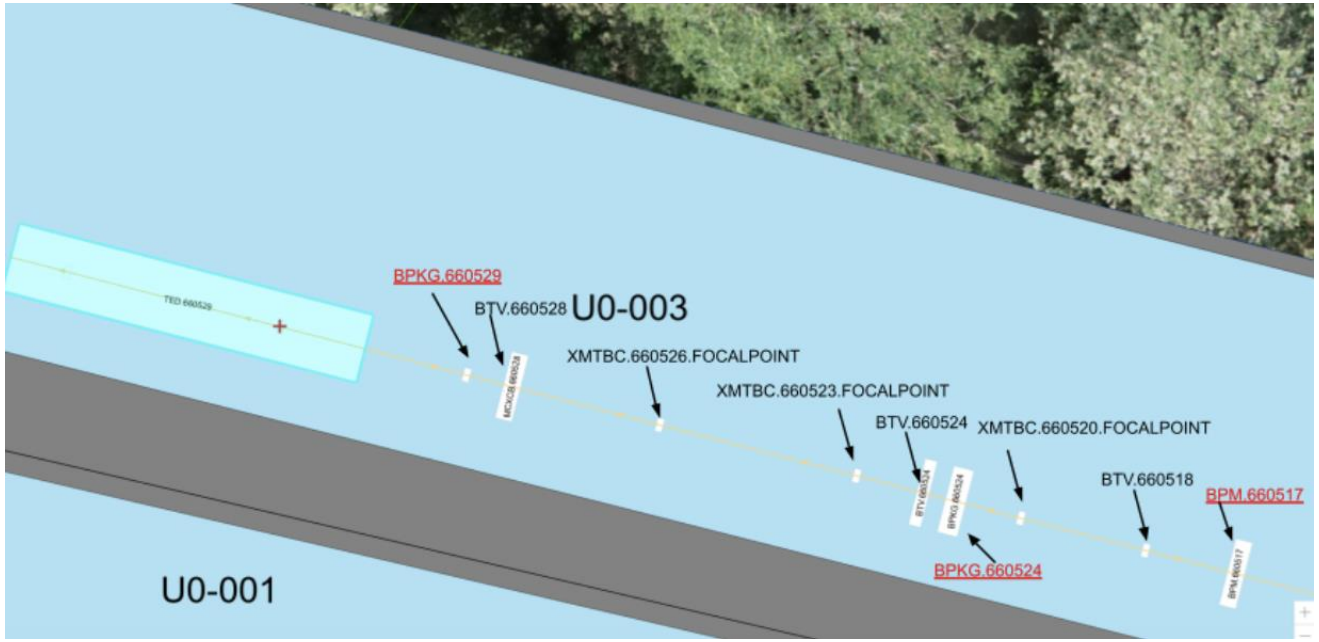
G. Banks

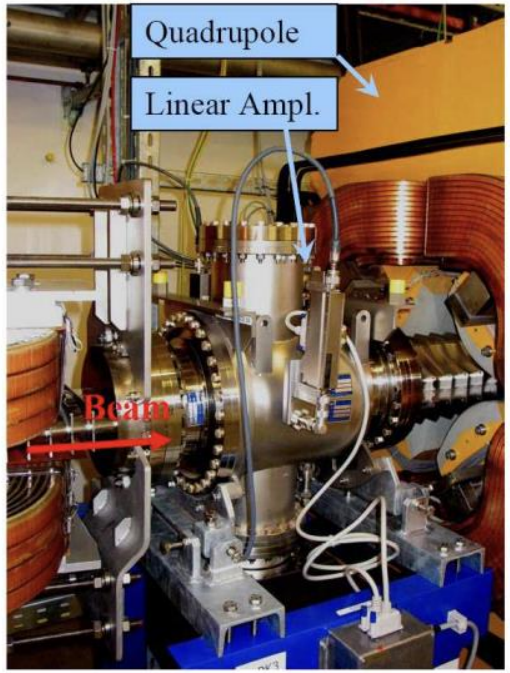


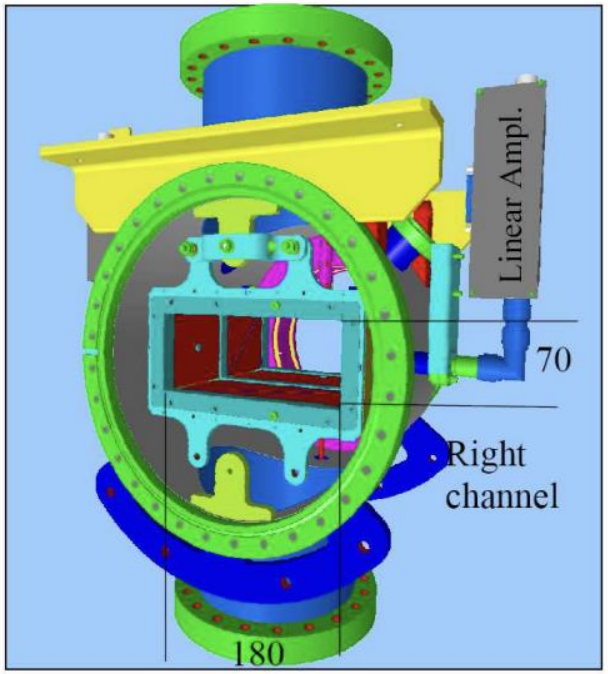
N. Charitonidis

BPM / BPKG

- Beam position monitors give the center of mass of the beam and the ‘longitudinal bunch shape’
- No magnets between the BPMs and BPKGs being analyzed

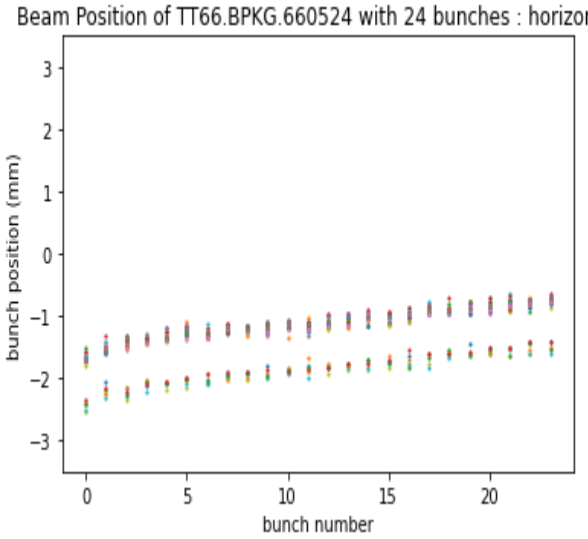


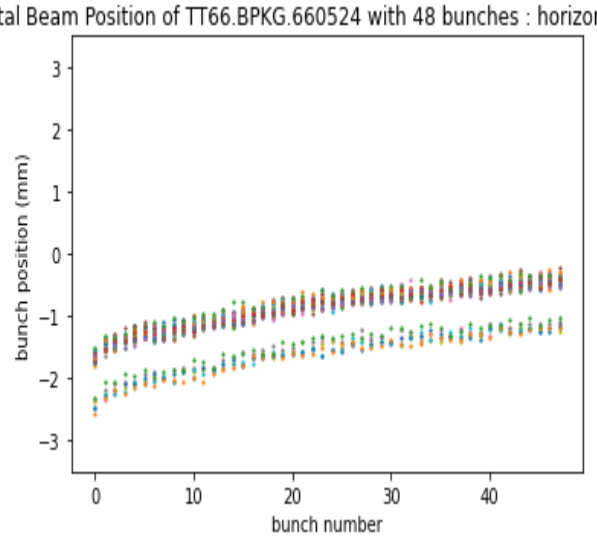


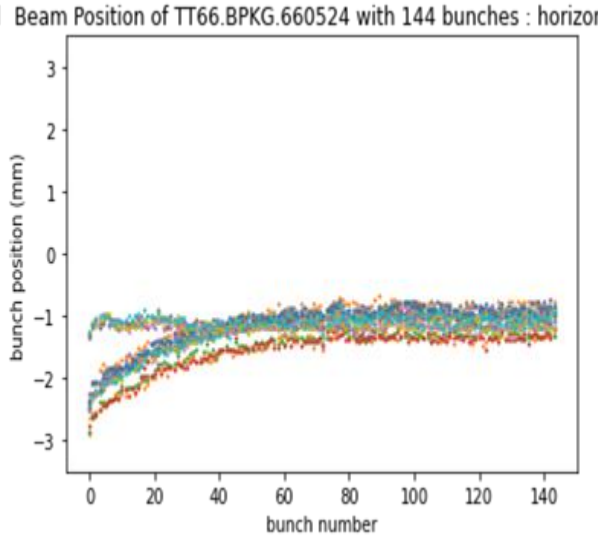


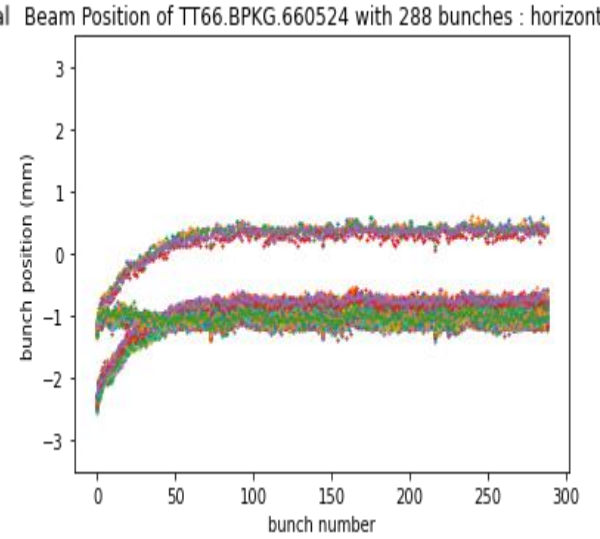
P. Forck, P. Kowina, and D. Liakin

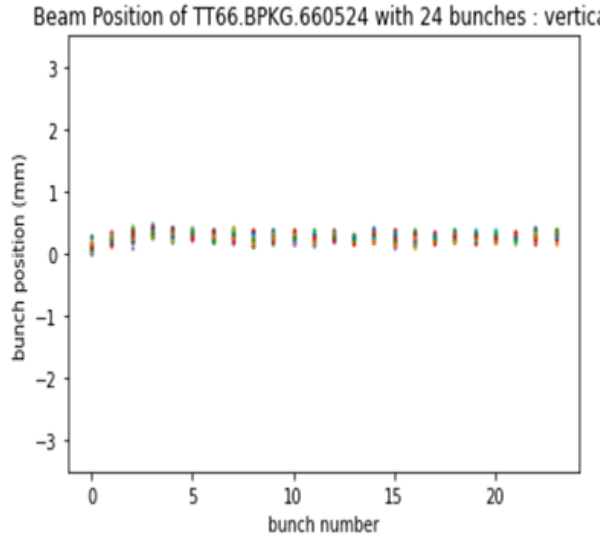
BPKG 660524 Results

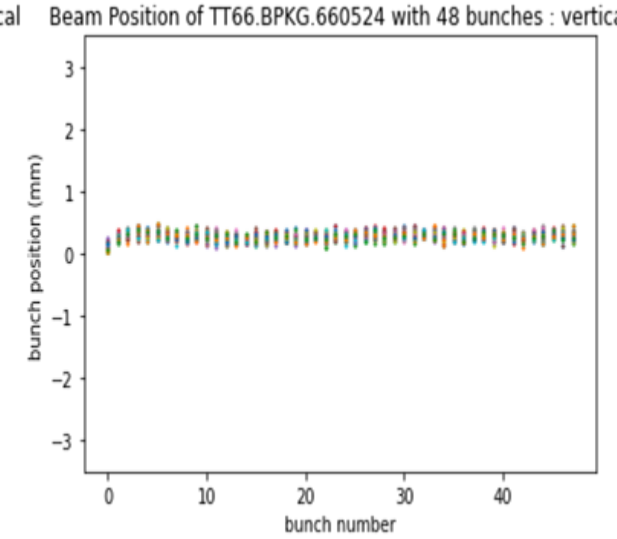


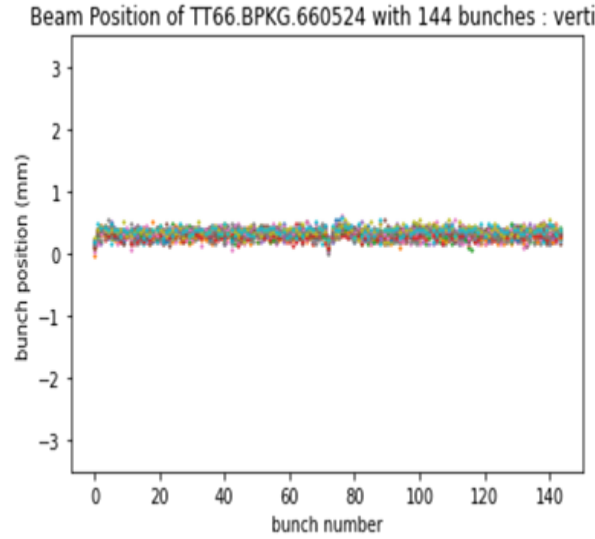












Next Steps

- **Calculate the true area of the beam so its density can be used by the STI group in August.**
  - ➢ Connect to Beam Size Monitor tool and obtain a direct size estimation of the beam in each direction.
- **Learn more about beam position monitors and meet with experts on the extraction beam line to figure out why we are seeing the drift in the BPMs.**
- **Analyze vistar script performance and optics results from STI pre commissioning (7/25) to prepare for their experiment in August.**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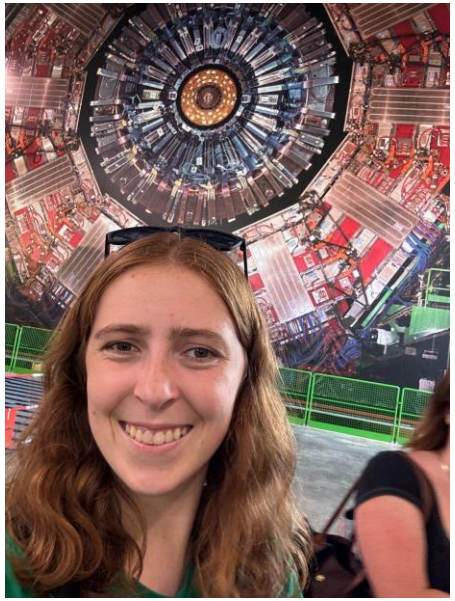

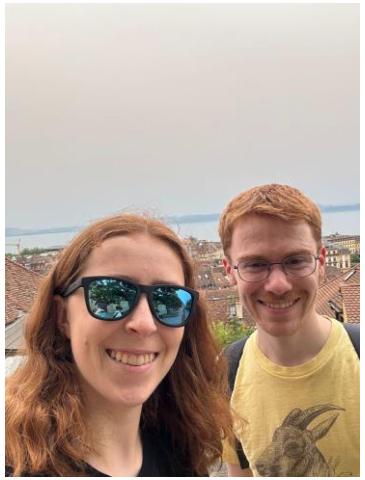

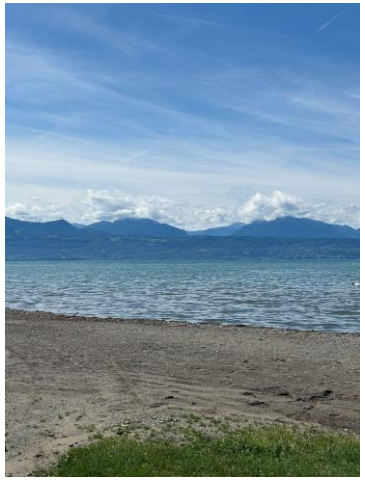

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