

SPS							
<b>Machine Coordinator last week</b>		Kevin Li					
<b>Machine Coordinator this week</b>		Stephane Cettour Cave					
Beam Scheduled							
<b>LHC</b>	Yes	<b>NA</b>	No	<b>AWAKE</b>	No	<b>HiRadMat</b>	No
Beam Availability by Destination (AFT)							
<b>LHC</b>	-%	<b>NA</b>	-%	<b>AWAKE</b>	-%	<b>HiRadMat</b>	-%
Facility Status							
<b>Summary</b>	<p>An intense week of scrubbing has passed for the SPS. As originally foreseen, the week was entirely dedicated to scrubbing, in partuclular with the new injection kicker magnet installed (MKP-L). The hope was to be able to now perform continuous scrubbing at high duty-cycle without being quickly limited due to MKP-L heating, which in the past required regular long cool-down periods. Indeed, the MKP-L perfomed marvellous in terms of heating with temperatures behaving rock-solid despite high intensity scrubbing at the long flat bottom over several days. Thanks to this, long flat bottom scrubbing could be completed efficiently and well in advance and the machine was ready to tackle scrubbing up the ramp already by Tuesday.</p>						
	<p>Unfortunately it turns out that, as opposed to the past, the new MKP-L is highly sensitive to the bunch length - very similar to the MKDH - and is thus subject to heavy outgassing only when moving close to the end of the ramp. Due to this, the scrubbing strategy was changed. A new cycle was designed after consultance with EPC on the PC limitations, with a long flat top at 400 GeV in order to enhance the scrubbing dose and efficiency at short bunch lengths to try and speed up the MKP-L conditioning. To be able to exploit the enhanced scrubbing, the software interlock strategy also had to be adapted and a change was implemented at the SIS level (MPK-L actual pressure monitored at end of cycle rather than maximum value attained). This allowed for intensified scrubbing at flat top for short bunches throughout the weekend. Although the MKP-L remains nearly flat in temperature, the MKP-S are still heating up and are now stepping out of the shadow of the MKP-L. Although the temperature levels are below the thresholds, the MKP-S are still being operated in regimes the magnets have not seen before. Over the weekend a spark occured in one of the MKP-S and required a kicker conditioning. During conditioning and in absence of beam, another pressure spike occurred, probably in the MKP-L. This should be further checked and analyzed next week by ABT. The re-conditioning of the MKP-S went slow and rather tedious.</p>						
	<p>In addition to scrubbing, on Wednesday, slow extraction setting up the the TT20 TEDs was completed; girder and ZS alignment was done. Noise correction algorithms are being tested on the spill throughout the week and on the weekend to help and solve the problems with 50 Hz and 100 Hz spill noise of the last years.</p>						
	<p>Beam has been extracted to the LHC since Tuesday and general availability of LHC beams is good. A MKE-6 kicker waveform scan was done on Friday as part of the fast extraction commissioning.</p> <p>Interventions were required for the inspection of RF complex loads, ZS exchange of the 3M circuit motor, and an intervention on a 18 kV transformer.</p>						
	<p>On Monday a test on the main setxupole and octupole power converters was done where the voltage has been artifically clamped to a limit of 1440 V. The impact on the chromaticity has been marginal. It was decided to keep running in this configuration for a more longer term experience in order to detect any potential issues with this. If this configuration is acceptable by the machine, future power converter consolidation could be significantly simplified and improved.</p>						

<b>Issues</b>	The new MKP-L is highly sensitive to the bunch length - very similar to the MKDH - and is thus subject to heavy outgassing only when moving close to the end of the ramp			
<b>Plans</b>	For next week, a meeting will be held on Monday to decide on how to proceed with scrubbing, which is currently heavily impacted by the MKP-L outgassing at flat top. Also, on Monday the commissioning of the new RF feedforward is planned. Furthermore, several high intensity long parallel MDs were planned. It will have to be evaluated how compatible these are with the required scrubbing.			
<b>Intervention Request</b>				
Yes	<b>Duration</b>	2 x 12 hrs	<b>Preferred date/time</b>	tbc
<b>Reason</b>	Investigative work for the crack in the SPS tunnel			
<b>Impact</b>	Beam stop for all downstream facilities.			