Plans and Current Status of AMBER antiproton measurement

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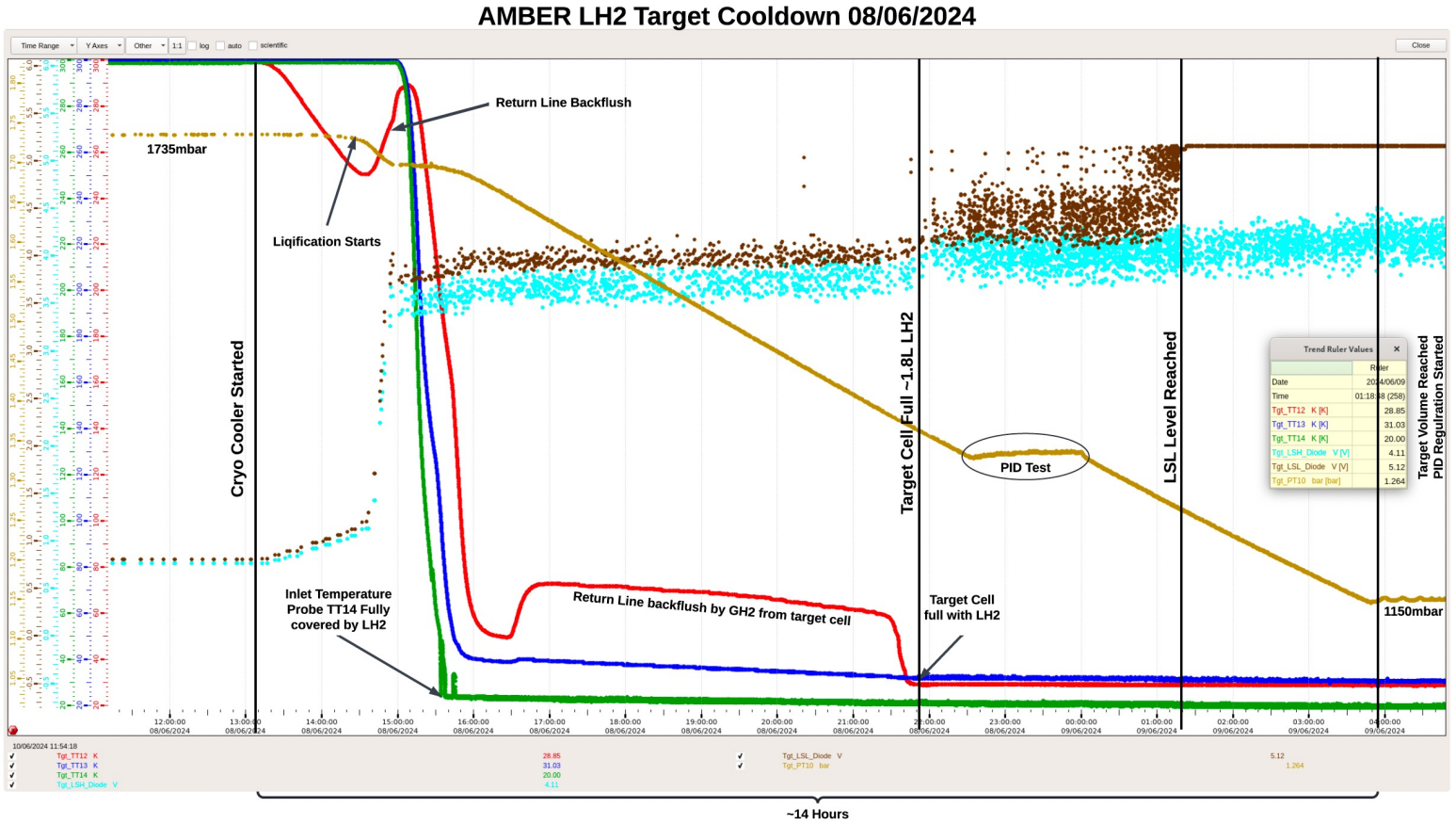
Finalization of target and start of physics data taking

- delay in safety and control system of the target (~5 weeks)
- safety clearance for hydrogen operation last Thursday afternoon
- commissioning, calibration, and operation with hydrogen starting from Friday (07.06)
- filling, cooling, stabilizing finished on Sunday 06:00 → start of physics data taking



AMBER
Apparatus for Meson and Baryon Experimental Research

Initially planned measurements and required statistics

Period	Target	Beam momentum (GeV/c)	Required number of spills	Estimated duration
W01	H	190	10000	3.3 days
W02	H	250	7500	2.5 days (+0.5 days beam tuning + Cedar setting)
W03	H	160	10000	3.3 days (+0.5 days setup)
W04	H	80	15000	5.0 days (+0.5 days setup)
		Switchover period Hydrogen to Deuterium(3-4 days)		
W05	D	190	10000	3.3 days
W06	D	250	7500	2.5 days
W07	D	160	10000	3.3 days
W08	D	80	15000	5.0 days
		Emptying of target for empty target measurements (2 days)		
W09	Empty	190/250/160/80	6000	2 days

In total estimated 37.9 days for the whole measurement (excl. MDs, ITS1,…)

Data taken and plans

- From Sunday 06:00 – Wednesday 07:30 (start of shutdown for TS1) ~6000 spills (~80% of first energy); need to continue afterwards
- only 25 beam days left → need to cut on physics program

current plan (minimal configuration for any physics output)

Period	Target	Beam momentum (GeV/c)	Required number of spills	Estimated duration
W01	H	250	7500	2.5 days (~1 day left)
W02	H	80	15000	5.0 days (+0.5 days setup)
	Switchover period Hydrogen to Deuterium(3-4 days)			
W03	D	250	7500	2.5 days
W04	D	80	15000	5.0 days
W05	Empty	250/80	3000	1 days

→ in total ~20 days required with min. 3000 spills per day to reach the absolut minimal goal

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W06	D	250	7500	2.5 days
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W08	D	80	15000	5.0 days
W09	Empty	190/250/160/80	6000	2 days

not possible anymore

Summary

- AMBER started physics run on 09.06
- Incredible fast start-up of the target (~36h) from first hydrogen injection to stable liquid-hydrogen target operation
- However, critical phase due to long delays, reaching of physics goals ”on a razor’s edge”

Thank you for your attention