

# The new High Intensity and Brightness Beams at PSI: Status and prospects

*Friday 19 July 2024 09:45 (15 minutes)*

Meson factories are powerful drivers of diverse physics programs and play a major role in particle physics at the intensity frontiers.

Currently, PSI delivers the most intense continuous muon beam in the world up to  $10^8 \mu^+/s$ . The High-Intensity Muon Beam (HiMB) project at PSI aims to develop new muon beamlines that deliver up to  $10^{10} \mu^+/s$ , with a huge impact for low energy muon-based searches.

While the next generation of proton drivers with beam powers over the current limit of 1.4 MW still requires significant research, HiMB focuses on optimizing existing target stations and beamlines.

We will present the results after the installation of the new production target, confirming the MC predictions, that putting it in perspective would be equivalent to a proton beam power of almost 2 MW. We will report on the design of beamline optics based on pure solenoid elements for the secondary beamlines, together with new high-brightness tertiary beamlines.

## Alternate track

1. Sustainability (accelerators, detectors, computing)

## I read the instructions above

Yes

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**Session Classification:** Accelerators: Physics, Performance, and R&D for future facilities

**Track Classification:** 11. Accelerator: Physics, Performance, and R&D for Future Facilities