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The high-intensity muon beam line (HiMB) project at PSI

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Muons are an excellent tool for answering both fundamental and applied questions concerning the structure and properties of matter and consequently are in high demand at accelerator facilities. For the materials sciences, muon spin resonance techniques (muSR) are used to probe the magnetic structures of novel materials. In particle physics a number of fundamental measurements rely on the availability of large numbers of muons such as those of the searches for lepton flavour violating decays, the precise measurements of the muon decay properties and studies of muonic atoms.
At the Paul Scherrer Institut (PSI) muon rates of up to 4x10^8 mu/s are available, produced by its 1.4 MW proton accelerator complex HIPA. While these are currently the highest muon rates available worldwide, projects in the US and Japan are underway that will be able to surpass these intensities by several orders of magnitude.
In order to maintain PSI's position at the intensity frontier in muon physics and to utilize the unique DC machine structure, a project has started to assess the possibility of creating a next-generation muon beam by modifying the existing Target M station. Initial studies showed that with a slanted slab target design viewed by two, closely placed normal-conducting solenoids as well as a solenoid based channel, surface muon rates of the order of 10^10 mu+/s can be achieved.
This contribution will present these studies and the current status of the project.

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