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High-Power Targetry R&D road map for HEP

Tuesday 12 August 2025 14:00 (30 minutes)

Designing a reliable target is already a challenge for MW-class facilities today and has led several major accelerator facilities to operate at lower power due to target concerns. With present plans to increase beam power for next-generation accelerator facilities in the next decade, timely R&D in support of robust high-power targets is critical to secure the full physics benefits of ambitious accelerator power upgrades. The next generation of high-power targets and beam-intercepting devices (beam dumps, absorbers, collimators ⋯) will have more complex geometries, novel materials, and new concepts that allow for use of improved high-heat-flux cooling methods. Advanced numerical simulations need to be developed to support design of reliable high-power beam targets. In parallel, development of radiation-hardened beam instrumentation is needed. Irradiation methods for high-power targets must be further developed, and new irradiation facilities are needed since only a few facilities worldwide offer beams suitable for target testing. A comprehensive R&D program must be implemented to address the many complex challenges faced by multi-MW beam intercepting devices.

Please consider my poster for contributed oral presentation

No

Would you like to submit this poster in student poster session on Sunday (August 10th)

No

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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