



Month 24/25 – milestone MS18

I.FAST

Innovation Fostering in Accelerators
Horizon 2020 Research and Innovation

Task 5.2 Milestone MS18:
Present and future AI accelerator applications
Delivered 31/05/2023

MILESTONE: MS18

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ABSTRACT

Based on presentations and discussions at two iFAST workshops, we review and classify present-day applications of artificial intelligence and machine learning in the field of particle accelerators, illustrating the various types of deployment and their demonstrated merits by way of example. Extrapolating ongoing trends and sketching possible future developments, we formulate a few open questions, and issue R&D recommendations. In particular, we suggest the construction of a testbed for self-controlling complex accelerators.

Upcoming

Month 42 (Oct '24) – deliverable 5.2
D5.2: Roadmap for future accelerators
Strategy for intense positron sources; R&D plan towards ultimate beams; State of the art and possible directions for crystalline beams; Strategy and requirements for EDM ring or other precision experiments; Roadmap for accelerator AI; State of the art and future roadmap for green accelerators

Upcoming

Month 48 (Apr '25) – milestone MS19
Ultimate hadron-beam brightness

iFAST WP5.2 – latest & upcoming events

WP5.2 coordination meeting, Trieste, April 2023



GR2M workshop, Bern, December 2023

- DLA for dark sector searches
- Plasma acceleration of muon and pions

<https://indico.psi.ch/event/14790/>



Upcoming events:

SRGWmb2024 – Storage Rings & Gravitational Waves – mini brainstorm , February or March 24, location tbd

“IPS” – Intense Positron Sources, Tentative location Paris, Tentative time” spring 24

RFA24 – Roadmap for Future Accelerators, Tentative location: Germany, larger Frankfurt areas, tentative time: Sept 2024