

SLS 2.0 MPS Commissioning and First Operation Experience

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As SLS 2.0 transitions from machine commissioning to full beamline commissioning and user operation, the demands on long-term reliability and high availability of the accelerator complex increase significantly. Ensuring minimal downtime requires fault-handling mechanisms that are both rapid and systematic, enabling the machine to respond safely and consistently to unexpected conditions. This discussion will examine the architectural principles, integration strategy, and operational experience of the key machine-protection systems. For SLS 2.0, these systems include the beam dump controller, the machine interlock system, the post-mortem framework, the injection guard, and the controlled emergency beam-dump procedure. Together, they form a coordinated protection layer essential for safeguarding equipment, maintaining beam quality, and supporting reliable user operation. The session aims to explore lessons learned, remaining challenges, and opportunities for further optimization as SLS 2.0 enters routine operation.

Author: ARMBORST, Felix (PSI - Paul Scherrer Institut)

Co-author: Dr PARALIEV, Martin (PSI - Paul Scherrer Institut)

Presenter: ARMBORST, Felix (PSI - Paul Scherrer Institut)

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