

Machine Protection Systems and Their Impact on Beam Availability and Accelerator Reliability

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Over the last decades, the complexity and performance levels of Machine Protection Systems (MPS) have developed. The level of reliability and availability analysis prior to operation differs between facilities, just as the pragmatic changes of MPS during operation. A study has been made on the experience and development of MPS for some of the state-of-the-art proton and ion accelerators, and how it relates to reducing damage to and downtime of the machine. The findings are discussed and categorized, with emphasis on proton accelerators. The conclusions give some recommendations for a future high power linear proton accelerator.

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